

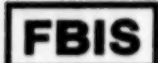
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25 February 1982

USSR Report

TRANSPORTATION

No. 72



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25 February 1982

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AIR

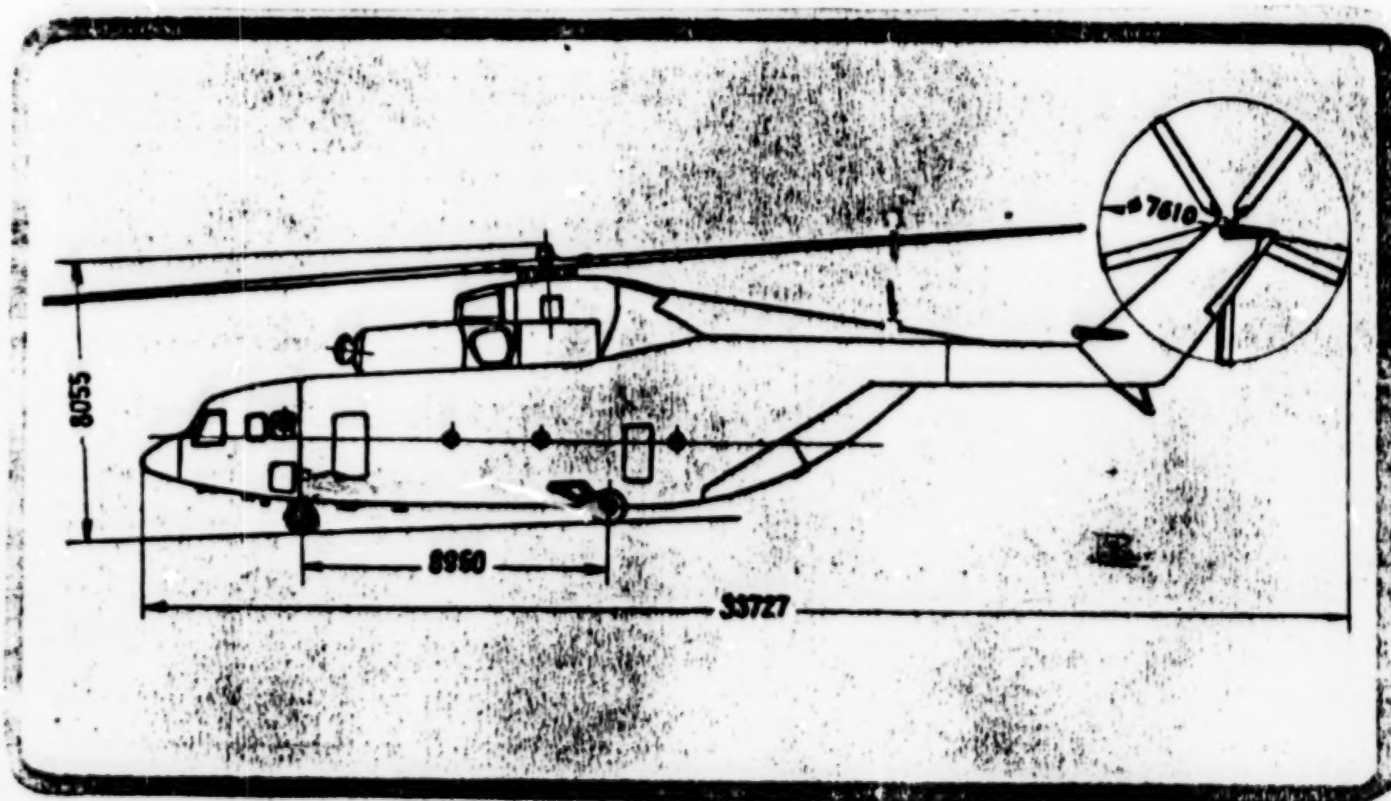
MI-26 HELICOPTER SPECIFICATIONS GIVEN

Moscow GRAZHDANSKAYA AVIATSIYA in Russian No 11, Nov 81 pp 16-17

[Article: "The MI-26 Helicopter"]

[Text] This helicopter is designed to carry large-dimension and heavy loads, both in the cargo compartment and on outside suspension. It can also be used for installation and construction jobs, including in remote and inaccessible regions.

The economic efficiency of using the MI-26 results from its combination of large load capacity and high cruising speed.



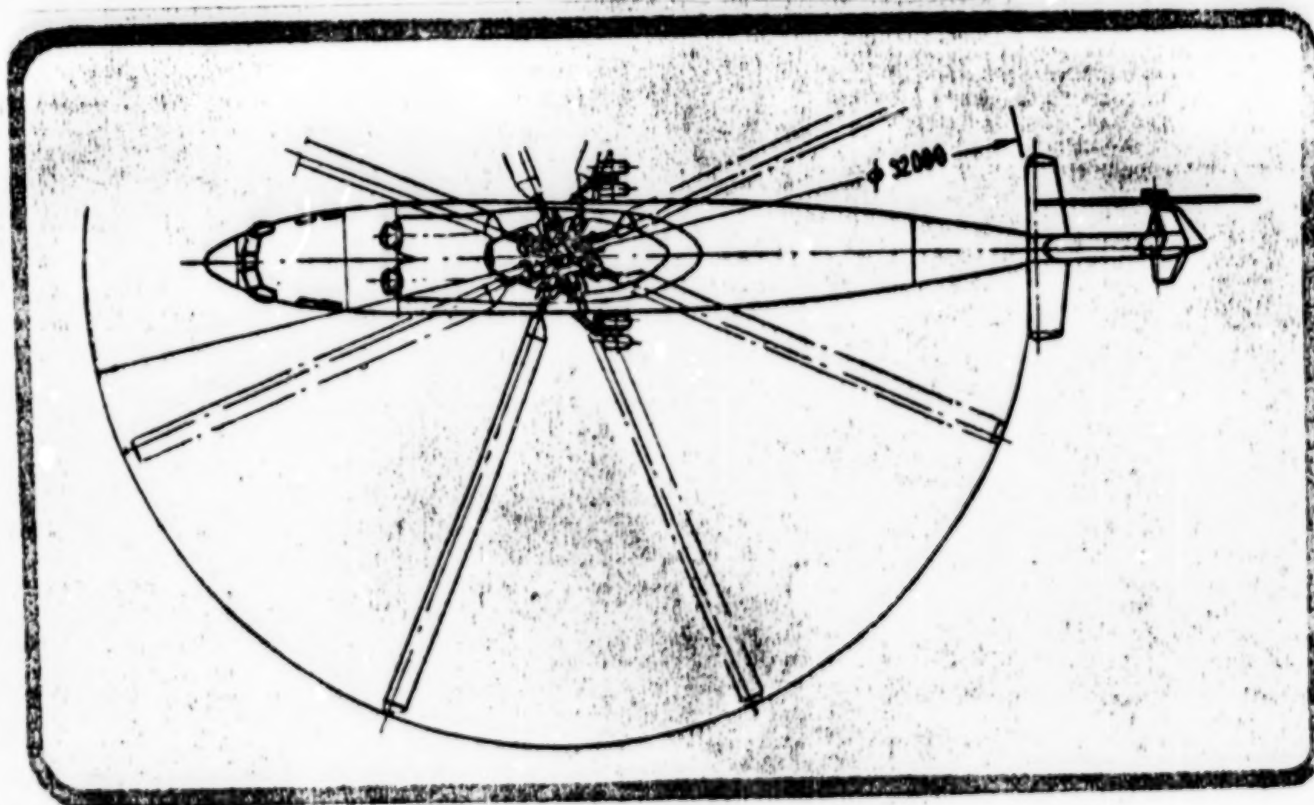
The helicopter has a set of piloting and navigation equipment that permits flights to be made at any time of the day or night and under difficult weather conditions.

The crew compartment provides a good field of vision. The convenient arrangement of control elements and instruments, the low level of vibration, and the air conditioning system make the working conditions comfortable.

The power plant has systems to automatically maintain the revolutions of the main rotor and to synchronize the power output of the engines (when one of the engines fails the power of the other is increased all the way to maximum). The engines have dust-protection devices that prevent accelerated erosive wear when the aircraft are used from unpaved landing zones.

The helicopter is simple and reliable to operate. Its design and the arrangement of its aggregate units permit technical servicing without specialized airfield equipment.

To mechanize loading and unloading work the aircraft has two electric winches and a hoist which can lift a load of up to five tons and move it along inside the compartment. The cargo hatch has a lowering ramp and ramp supports.



Basic Helicopter Specifications

Load Capacity:

Normal 15 tons
Maximum 20 tons

Takeoff Weight:

Normal 49.5 tons
Maximum 56 tons

Weight of Unloaded Helicopter 28.2 tons
Diameter of Main Rotor 32 meters
Number of Blades 8
Crews 5 persons

Speed:

Maximum 295 km/hr
Cruising 255 km/hr

Flight Range with Maximum Fueling 800 kilometers

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11,176
CSO: 1829/116

AIR

DIRIGIBLE TESTED FOR CONSTRUCTION WORK

Moscow GUDOK in Russian 29 Jan 82 p 4

[Article by V. Molodyakov: "A Look into the Future — the Hovering Heavy-Duty Vehicle"]

[Excerpts] The television cameraman and press photographers photographing the flight were nervous about the weather. It was a gray, cloudy day without any hope of clear sky. And even the participants in the tests, the specialists from the All-Union Scientific Research Institute for the Organization of Energy Construction, had ambivalent feelings: How would their offspring behave up there, in the gusts of wind? Would it make it? At the same time they understood that this was precisely the kind of bad weather that would really test the reliability and maneuverability of their vehicle.

And so the small white and orange dirigible began rising slowly into the darkened sky. From a distance you could not immediately distinguish the wing under its body, the rotating propellers, and the thin lines connecting the little aircraft with the ground. But the unusual design of the vehicle did attract attention: it is composed of two "cigars" set one above the other. But it was even more striking that this small device was fighting the elements. Vibrating and rolling slightly, it obediently carried out all commands given from the control console. Now the vehicle was returning, headed into the wind like a weathercock, and then, catching onto something resembling a power transmission tower on the ground, it again rose up and stopped, practically immobile.

This was the most recent test of this model of the ELAS-1 powered flying vehicle. Professor O. Chembrovskiy, deputy director of the institute, said that the principal function of this airborne crane, or more accurately of the "mature" vehicles to come, is to insure precision installation of construction elements.

This innovation of the designers and engineers behaved marvelously. And although the principal purpose of the heavy-duty heirs of the ELAS will be installation work, these vehicles will open the way for the transport dirigible of the future.

The dirigible will be able to function as a track-layer, carry bridge girders directly from the factory to the installation point, and deliver machinery, equipment, and teams of construction workers to inaccessible taiga regions. The installation dirigible will easily manage operations that an ordinary crane cannot. Incidentally, Dmitriy Sergeyevich is now working on debugging the current model of the design for high-precision aerial installation.

As I was saying goodbye, I asked him what would be the happiest day of his life.

He answered, "It will be the day when, as in my distant youth, I go up in the cockpit of a transport dirigible. Even if I am just a passenger. I believe that the day is not far off! Incidentally, already this year we will be testing a vehicle that will be able to lift a load of up to eight tons."

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CSO: 1829/118

AIR

REMOTE-CONTROLLED ELECTRIC PLANE SUCCESSFULLY TESTED

Moscow IZVESTIYA in Russian 25 Jan 82 p 4

[Article by A. Polyakov: "The Robot Plane Takes Off"]

[Text] We were standing close, but I did not hear the takeoff. The plane gained altitude easily and noiselessly. The electric plane circled above the white field for a long time. This was the experimental model of a unique flying craft.

The machine is controlled by automation. One of the designers is A. Pavlov, head of the student design bureau of the Moscow Aviation Institute imeni Sergo Ordzhonikidze. He was bent over the compact control console, moving levers and sending commands from the ground to the sky. The unmanned aircraft carried out all assignments precisely.

"Yes, our electric plane is obedient," said Anatoliy Pavlovich. "Like a robot, it can perform assigned programs. It understands the language of radio signals instantly. The plane was built by students, specialists at our institute, under the direction of Professor Yuriy Ivanovich Konev, a doctor of technical sciences."

But what kind of thing is this electric plane? Its fundamental feature is a DC motor, also developed by the young designers. It weighs very little, but its efficiency is extremely high, up to 95 percent. The conventional fuel tank is replaced by a tiny storage battery that weighs about 1.5 kilograms. But the vehicle itself is quite large: a three-meter wing span and a body length of about two meters. It has a forward-sweeping fuselage and a rapid propeller that cuts the cold air. The experimental model can stay in the air for almost an hour, as long as the battery charge permits.

The designing of the craft, which combines high strength with simplicity and low weight, took a great deal of time and effort. The calculations were made on a computer.

A. Pavlov continued, "Specialists believe that the time is not far off when electrical energy will become the cheapest form. That is exactly what we had in mind when we built experimental models of the vehicle with this kind of motor."

The electric plane that we are now testing is the third in the series. The earlier models did very well. One of them was recently put on display at the Exhibition of the Achievements of the USSR National Economy."

The plane came in for landing. The noiseless, light vehicle slid smoothly out of the sky, obeying the commands of the "pilot" who had no reason to go up in the air. The designers think that practical work for the vehicle will be found quickly. For example, it could be used to measure atmospheric parameters during research or to distribute useful insects on agricultural fields. Equipped with the necessary instruments, it could fearlessly approach the flaming crater of a volcano or travel through the thick smoke of a forest fire, collecting data. This unmanned robot plane, whose load capacity increases with each model, will find many other useful jobs.

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CSO: 1829/120

AIR

BRIEFS

NEW ORDHONIKIDZE AIRPORT—Ordzhonikidze, 28 Dec—On the eve of the new year, a new air terminal complex has been opened. The first TU-154 B2 jet airliner landed at the Ordzhonikidze airport, on a technical flight from Rostov-na-Donu. The new Ordzhonikidze airport will serve its first passengers in early 1982. The Northern Ossetian region will now have air connections with almost 30 cities in the country. [By V. Artemenko] [Text] [Moscow PRAVDA in Russian 29 Dec 81 p6] 11176

SARANSK ROUTES OPEN—Saransk, 11 Jan—Regular air travel by TU-134 turbojet aircraft has begun between Saransk and Minsk, Sverdlovsk, and Novosibirsk. The capital of Mordvinia now has air connections with 20 major cities in the country. [By A. Shiryayev] [Text] [Moscow PRAVDA in Russian 12 Jan 82 p6] 11176

IL-86 FLIES TO PARIS—Another European capital has been added to the flight charts of the new Soviet IL-86 liner. Yesterday this wide-body aircraft, which came into use on Aeroflot routes one year ago, made its first passenger flight from Moscow to Paris. The new aircraft, together with the IL-62, YaK-42, and TU-154 aircraft, make up a group of planes which will account for three-quarters of the total volume of air traffic in 1982. The spacious and well-lighted cabins of the giant plane, which hold 350 passengers, enables it to be used on the busiest routes. After flying to Paris the IL-86 returned to Moscow the same day. [By A. Sergeyev] [Text] [Moscow PRAVDA in Russian 24 Dec 81 p 6] 11176

AN-24 USED IN NORTH—Tomskaya Oblast—It took the field workers of the Vasyuganskoye deposit 35 minutes to get to one of the most remote work sites, instead of the 90 minutes it took not long ago. The AN-24 aircraft, which delivered the entire "team" of 48 at once, has replaced the slow and small helicopter on this line. Incidentally, the helicopter had to make several trips to carry that many people. This flight was the beginning of regular travel by the heavy aircraft from Novosibirsk and Tomsk to the settlement of Pervomayskiy, the main base of the Tomsk oil workers. [By A. Lyakhov] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 16 Jan 82 p 1] 11176

ARCTIC SUPPORT MISSION—Leningrad—The participants in the Sever-33 high-latitude aerial expedition have returned to Leningrad from the Arctic. Their mission was to support the Severnyy Polyus-22 scientific station that is

drifting in the polar basin. It proved more difficult to establish an aerial bridge to the SP-25 station. Powerful compression of the ice there had ruined its airstrip. Poor weather conditions and the polar night hindered the work. Only after setting up a so-called "halfway field" on Zhokhov Island in the DeLong Archipelago was it possible to deliver some eight tons of food and diesel fuel to SP-25. [By A. Viktorov] [Text] [Moscow IZVESTIYA in Russian 6 Jan 82 p6] 11176

TARTU AIRPORT—Estonian SSR—The new airport in Tartu is designed to serve 100 persons an hour. The second largest city in Estonia now has air connections with Moscow, Kiev, Simferopol', and many populated points in the republic. New lines to Minsk, Odessa, and Sochi are to be opened in 1982. The photograph [not reproduced] shows the new airport in Tartu. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 3, Jan 82 p 16] 11176

SARANSK AIRPORT REBUILT—Saransk—The airport in the capital of Mordvinia has joined the ranks of Soviet airports capable of receiving passenger planes. The first large ship, a TU-134, has landed here. This flight opened a regular new route: Minsk—Saransk—Sverdlovsk—Novosibirsk. Reconstruction of the airport made it possible to expand its capacities. A new runway with radar landing equipment was put into use and the terminal was enlarged. The volume of passenger traffic will now increase by 2.5 times; the airport will serve 300,000 persons a year. [Text] [Moscow KRSNAYA ZVEZDA in Russian 3 Jan 82 p11 11176

IL-86 FLIES TO INDIA—A Soviet-built wide-body IL-86 aircraft landed at the airport in the capital of India. It had traveled by the route from Moscow, stopping at Tashkent, to Delhi, a distance of 5,100 kilometers, in seven hours. It was just six months ago that the IL-86 began regular trips on Aeroflot's international routes. In this time the Soviet airliner has carried about 40,000 passengers, connecting Moscow with Berlin, Paris, Prague, Hamburg, Budapest, and other Western European cities. Now this is the first landing on the Asian continent. [By V. Chebakov] [Text] [Moscow PRAVDA in Russian 24 Jan 82 p 6] 11176

IL-86 FLIES TO PARIS—At 0950 yesterday, 23 December 1981, an IL-86 airliner took off from the international Sheremet'yevo-2 airport on the new Moscow-Paris route. Paris is the sixth Western European capital to which the wide-body plane has flown this year. It is true that the IL-86 was displayed last summer at the International Exhibition of Aviation and Space Sciences at the Paris Bourgenues airport, where it attracted great attention from visitors. The IL-86 now appears in a different capacity. It is making the charter trip with passengers on the Moscow-Paris route, which has been in operation for decades. In August 1958 the pioneer of Soviet passenger jets, the TU-104, began flying the Moscow-Paris passenger route. Its crew was headed by the well-known Aeroflot pilot V. Filonov. In August 1967 the IL-62 aircraft was put on this route, and now there is another premier: the first flight by the IL-86. A significant event for world civil aviation and a number of airline companies was the opening in the spring of 1970 of flights by aircraft of Aeroflot, Air France, and JAL (Japan) on the trans-Siberian route from Paris through Moscow to Tokyo and back, the shortest distance from Europe to Japan. Consistent introduction of the Aeroflot's latest aviation equipment on the Moscow-Paris route insures that passenger and freight traffic will continue to grow and commercial ties will become stronger. [By V. Degtev] [Text] [Moscow VOZDUSHNYY TRANSPORT in Russian 24 Dec 81 p 3] 11176

SNOW-ICE REMOVAL MACHINE—Kiev—The Kiev Institute of Civil Aviation Engineers has designed a machine to remove ice and snow from airport and road surfaces with superheated water vapor. The meltwater is blown to the edge of the surface by a blast of steam. This machine removes ice and snow twice as fast as existing machines. [By S. Klyuchnikov] [Text] [Moscow IZVESTIYA in Russian 9 Jan 82 p 6] 11176

MOTOR VEHICLE

IMPROVEMENTS PLANNED FOR BELORUSSIAN MOTOR VEHICLE PLANT

Moscow AVTOMOBIL'NAYA PROMYSHLENNOST' in Russian No 12, Dec 81 pp 4-5

[Article by I. S. Mayberg and V. A. Ustinov, Giproavtoprom [State Institute for the Planning of Motor Vehicle Industry Plants]: "The BelAZ [Belorussian Motor Vehicle Plant] in the 11th Five-Year Plan"]

[Text] The basic output of the Belorussian Motor Vehicle Plant consists of the dump trucks and the motor vehicle train of great and especially great carrying capacity. These are the BelAZ-540, BelAZ-548 and BelAZ-549 with a carrying capacity of 27, 40 and 75 tons respectively (Illustration 1), the BelAZ-7420-9590 motor vehicle trains with bottom unloading and a carrying capacity of 120 tons (Illustration 2), the single-axle BelAZ-531 tractors, and others.



Ill. 1. The BelAZ-549B dump truck with carrying capacity of 75 tons.



111. 2. The BelAZ-7420-9590 dump truck motor vehicle train and coal carrier with bottom unloading and carrying capacity of 120 tons

The plans for the future call for modernizing the BelAZ-540 and BelAZ-548 dump trucks, improving their operational qualities, increasing the normative travel before capital repair, carrying out operational tests of the models with a carrying capacity of 110 tons, and beginning production of them. In addition, preparations are in progress for production of dump trucks with especially large carrying capacity--180 tons.

All these measures constitute the answer of the Belorussian motor vehicle plant collective to the decisions of the 26th CPSU Congress calling for increasing and developing mining dump trucks with especially large carrying capacity. The measures are based on the material and technical potentialities of the plant.

The BelAZ includes billet and press, welding, and machine assembly production and the over-all assembly with a complex of tests and delivery. The forge work, cast materials, power units, electric power equipment and the other items which are used to outfit the basic production the plant obtains on a cooperative basis from enterprises of the motor vehicle and other sectors of industry.

However, in the current five-year plan the PO [development plans] of the BelAZ call for the setting up of a shop for the production of wheels, large hot pressing and forging machines, and also the organization of a shop for large castings. According to the plan, the basic production of the BelAZ will be assigned in the currently operating block of production shops (BPTs-1) and in the block under construction (BPTs-2). In the BPTs-1 they expect to concentrate the machine assembly and assembly production of the series dump trucks with a carrying capacity of 27 and 40 tons as well as the shops for over-all plant purposes (thermal and pressing shops, a shop containing booths with sectors for painting the entire gamut of dump trucks and tractors, the machine assembly shop for hydraulic transmission) and the building's auxiliary services.

The production specialization adopted will significantly increase the labor productivity and cut down the volume of transport communications and freight shipments in the basic production, the wheeled intraplant transport, and the number of auxiliary workers.

In addition to the BPTs-1 and BPTs-2 buildings, the provisions for the production of the basic output involve the use of the operating buildings No 1, 2 and 3, which are being rebuilt, the building for auxiliary shops, etc.

To increase the production of dump trucks with especially large carrying capacity--110, 180 tons and above--the current five-year plan also prescribes the construction of a new production building where these dump trucks will be assembled.

The closed cycle has been adopted as the basis of the organization of the technological processes. Thus, in the welding and assembly shops for the chassis and platforms and in the pressing shop and welding shop for the assembly of the cabins the technological processes are organized on the basis of the unit principle: the shops produce the parts and units which comprise the assembly in a completed form. In the machine assembly shops the production is organized on the principle of the closed technological process for the manufacture of the parts which comprise the unit and this is done within a single department with use of the group method of manufacture of parts of similar design.

The use in the BelAZ of the group method of manufacture of parts with series production enables them to artificially increase the program for production of the specific parts and consequently to mechanize the technological processes, to use specialized and highly productive equipment in these processes, and to step up the load coefficient of the special machine tools and the labor productivity of the workers.

In the period of the 11th Five-Year Plan the new technological processes are being extensively used. In the billet shop for the chassis and platforms the bending of the pipe will be done only in the units with numerical program control (ChPU). The machine tools with ChPU in current use have enabled them to increase the labor productivity and to insure superior and stable quality of the items produced. Also furthering this is the process introduced in production of using ultrasonic washing installations for cleaning the pipes for hydropneumatic feeding of the motors of the dump trucks.

In addition, for billets with a bulk up to 2.1 tons manufactured from high-strength low-alloy steel sheet 25mm thick, this shop has provided for a progressive, highly productive process of oxygen and plasmic cutting on gas cutting machines with ChPU. These machines are equipped with triple-cutting pulleys which make it possible to combine the operations of contour cutting of the billets and to divide their rims (bevels) for welding of the parts into a unit. Also, the billets can have a contour with a complex configuration and dimensions up to 2,200 by 8,000mm. There is simultaneous cutting of two sheets, which allows for incorporating optimum pattern cutting of the sheet in the program.

In the welding and assembly shops for the chassis and platforms the welding of large-dimension heavy chassis and platforms will be carried out on a continuous operation mechanized conveyer welding line (for the chassis) and a continuous operation welding line (for the platforms). The first of these consists of two parallelly situated vertically closed conveyers equipped with 11 mechanized tilters which, along with the chassis, move from one conveyer to another by means of two transmission devices. In the time of the welding all the positions on the line

are synchronized and equipped with lifting and moving platforms for the welders and also with welding automatic and semiautomatic devices.

The welding flow lines for the platforms are made up of five positions, each of which represents a stationary mounted tilter which rotates and sets up the welded units in a position suitable for the work. The tilters are arranged for fulfillment of the operations and equipped with lifting and moving platforms for the welders and also with welding automatic and semiautomatic devices. The time for the operation is synchronized by positions. The conveyance of the units is carried out by means of a traveling crane equipped with a special suspension.

In the press production there is even more extensive use of the crank press sheet stamping presses (including presses with pull-out tables) and sheet bending machines with programmed control for parts with a large number of curves (the cabin transmission panel, the cantilevers, the fenders, the mudguards). In comparison with the ordinary joggling presses, this enables them to reduce the time for the readjustment and to increase labor productivity by one and a half to two-fold.

A number of parts of the cabin and rear parts made from thin sheet rolled metal are to be manufactured on contour and cutting machines with programmed control. This planning choice enables them to cut down the input for manufacture of stamps and other technological equipment and to reduce the time for production preparation.

The stamping of the friction clutch discs and a number of other parts is now being done on an automatic press, one with finishing stamping. This obviates further machine processing, increases the labor productivity 10-12-fold (especially in the machining of the contour of the exterior and interior grooves and slits), and reduces the labor intensiveness to 1/3-1/5 of its former level.

In the machine processing production the most complicated and the precision parts are processed on machine tools with ChPU. This applies to such parts as the pneumahydraulic suspension cylinders, the brake shoes, the brake drums, the naves of the front and rear wheels, etc.

This decision is dictated by small-series production, by the inflexibility of the technical requirements for manufacture of the parts, by the sizable number of parts being machined, by the desire to increase the labor productivity, and by the inevitability of continuous modernization of the designs produced by a motor vehicle equipment plant.

For example, in the machine shop for trucks of large and especially large freight capacity they have made provision for 514 units of metal-cutting equipment of which 203 (including 88 for the processing center), that is, about 40 percent have ChPU. The machine tools of the machine processing sector are controlled from two EVM [electronic computers] which also control the quality of the machined parts and the condition of the cutting instrument and equipment as well as keeping an account of the production of parts.

The use of machines with ChPU has resulted in the stepping up of labor productivity to 2.5-3 times its former level and has eliminated the expenditures for the manufacture of heavy, expensive equipment.

The process of painting the parts and the units and components in the assembly (the bridges and the hydrotransmissions) for the dump trucks with a carrying capacity of 27 and 40 tons--this process is to be carried out on a mechanized conveyer line which uses a suspension freight--carrying conveyer. The painting of the chassis and platforms of the whole gamut of motor vehicles produced and prepared for production is planned for fulfillment on mechanized conveyer lines equipped with ground-type conveyers with special carts. The painted chassis are delivered to the places for over-all assembly of the motor vehicles and the platforms directly to the shop for outfitting them for shipment to the consumers.

The surfaces are prepared for painting by the jet method in washing units. The coats are applied by mechanized and automated spraying methods: pneumatic in touching up before final delivery of the motor vehicles, electrostatic when painting the chassis units, and vacuum spraying when painting the chassis and platforms. (The use of electrostatic and vacuum painting makes for a considerable reduction in the number of production workers and eliminates manual labor).

The painting is done with materials which dry at low temperatures; this makes it possible to reduce the need for production floors and provides for a saving of heat energy. There is also a reduction in heat consumption as a result of use of the vacuum method of spraying lacquer and paint materials in painting the chassis and platforms. This method of painting also reduces the amount of air supplied for ventilation.

The overall assembly of the series-produced motor vehicles with a freight capacity of 27 and 40 tons is carried out on an assembly conveyer of the stand and cart type and the assembly of vehicles with an especially large freight capacity on a conveyer with detachable carts (two to a vehicle). The carts operate by chain drive. Their return to the original position is accomplished by a traveling crane. The conveyer consists of six working positions, each of which is specialized for fulfillment of specific operations and is equipped with special lifting and transport facilities. Thus, the installation of the motor and wheels, the wheels with tires, the radiators, the suspension cylinders, the tilting mechanism, and the other units is to be carried out on special stands equipped with mechanisms for facilitating the assembly.

The decisions adopted in the BelAZ remodeling plan, some of which have already been fulfilled and some are now being fulfilled, make possible a considerable increase in the production of the motor vehicle equipment which operates in the mines where coal and ore are extracted by the open method. They also substantially increase labor productivity in the extraction sectors of industry and will contribute to accomplishment of the tasks assigned to the motor vehicle workers by the 26th CPSU Congress.

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MOTOR VEHICLE

IMPROVEMENTS IN ROAD CONSTRUCTION MATERIALS USE ANTICIPATED

Moscow EKONOMICHESKAYA GAZETA in Russian No 49, Dec 81 p 9

[Article by E. Kuptsov, director of the Scientific Research Institute of Road Planning]

[Text] We have a saying: "Roads are expensive, but the lack of roads is even more expensive." And, in fact, poor roads often lead to significant loss of agricultural production output, delivery of materials to construction sites is impeded, and transport vehicles wear out prematurely.

However, construction of the modern highway with 6-meter-wide roadway is no trifling matter. Every kilometer requires 5,000 cubic meters of gravel, 6,000 cubic meters of sand, 220 tons of tar, 150 tons of cement, and 20 tons of metal. These figures must be multiplied by the relevant scale factors--about 10,000 kilometers of such roads are built every year in the RSFSR.

Is the consumption of all these materials really necessary? Can't we build the roads more cheaply? GiproDorNII [State Scientific-Research Institute of Road Planning] of the Ministry of Highways of the RSFSR is working purposefully in this direction. With the approval of the CPSU Central Committee, we are utilizing the experience of Gidroyekt [All-Union Planning, Surveying, and Scientific-Research Institute] in improving the scientific and engineering level of the plans and reducing on this basis the estimated cost of construction of the projects and the expenditure of labor and material resources.

The goal of the socialist pledges made by the GiproDorNII team is to reduce by at least 123 million rubles the estimated cost of constructing the roads and other facilities, the planning for which is included in the institute plan for the 11th Five-Year Period. We have resolved to reduce cement consumption by 77,000 tons, rolled metal by 25,600 tons, lumber by 22,000 cubic meters. How are these results to be achieved?

First of all, by broader use of local stone in road construction to eliminate expensive haulage. We already have some experience in this regard. In the construction of a segment of the Sverdlovsk-Serov highway, the designers at the suggestion of the scientists made plans to utilize waste material from the dumps of a nearby mine. This made it possible to save at least a million rubles and release more than 9,000 railroad cars intended for transporting the materials.

Together with the other institutes, we have already prepared catalogs of local materials for 18 oblasts, krays, and autonomous regions of the RSFSR. With the aid of the catalogs, it is considerably easier to evaluate and properly utilize many construction material sources. This work is being continued at the present time.

We believe that another important direction in conserving material resources is the use of computers and planning programs. With account for the increasing requirements on service life and reliability, these aids will make it possible to find the optimal solutions for the entire project with minimal costs. The economic effect from the cost reduction resulting from the selection of optimal bridge variants alone amounts to 5 million rubles. It is possible to save thousands of tons of metal, cement, and other materials.

A new composite road-surfacing material consisting of coarse gravel and bitumen slag is competing quite successfully with the traditional bituminous concrete surface with regard to quality. At the same time, the man-hours are reduced by one-third and the consumption of scarce bitumen is reduced by 20 percent. A whole family of new inorganic material compositions for road surfacing has also been developed and is already in use.

In the coming 5-year plan, the highway builders will have to work particularly efficiently and economically. Our designers and scientists are ready to help them in this regard.

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CSO: 1829/81

MOTOR VEHICLE

POOR ROADS REPORTED TO CAUSE LOSSES

Specific Problems Reported

Alma Ata SEL'SKOYE KHOZYAYSTVO KAZAKHSTANA in Russian No 3, Mar 81 p 15

[Article by V. Sozonov, director of the Capital Investment Sector of the Kazakh Branch of the State All-Union Scientific-Research Institute of Roads and Highways and T. Smirnova, P. Pasechenko, and B. Chumachenko, docents of the Alma Ata Institute of Economics]

[Text] The development of an extensive network of hard-surfaced roads is one of the factors determining the progress of both individual industries and the national economy as a whole. The construction of roads for the agricultural regions is particularly important. It was emphasized at the 26th CPSU Congress that implementation of the Party food production program is impossible without marked acceleration of the growth rates of the industries providing transportation, storage, rational utilization, and delivery of the final agricultural product to the consumer. This need is a result of the fact that the present level of the material and technical infrastructure base, primarily in the road construction industry, does not yet meet our requirements.

In Kazakhstan, the local roads constitute 56 percent of the general-purpose road system, but only 45 percent of the local roads are hard surfaced. The intrafacility roads, connecting the central farmsteads of the sovkhoses and the kolkhozes with the brigade farms, the divisional farms, and the individual farms exceed the local roads in overall length--and they are nearly all unpaved.

Thus, in Tselinograd Oblast the central farmsteads of 21 kolkhozes and sovkhoses do not have reliable communication with the regional centers, and 134 divisional farms do not have reliable communication with the central farmsteads. We should note that the percentage of general-use roads which are hard surfaced is highest here in comparison with the other oblasts of the republic.

The considerable length of the dirt roads makes transport operations dependent on the weather and the climate. In bad weather, in the rainy season, and in the winter, motor transport must travel 10-15 percent further in order to circumvent the nearly impassable areas and transportation often comes to a stop. Estimates indicate that, in the northern regions of Kazakhstan, each truck spends an average of 40 days out of operation because of impassable roads.

In many regions of Kazakhstan, the kolkhozes and sovkhoses have been forced to use more than half of the tractor fleet for towing trucks and hauling cargo.

There is considerable increase of fuel and oil consumption during operations under extremely difficult road conditions. The expenditures on major overhauls and minor repairs of the trucks and on acquisition of spare parts because of failures associated with bad roads double or triple.

Studies made by the Kazakh Branch of Soyuzdornii [State All-Union Scientific-Research Institute of Roads and Highways] and the Alma Ata Institute of Economics in northern and western Kazakhstan made it possible to determine the losses from lack of roads for the example of kolkhozes and sovkhoses of several regions which are similar with regard to natural and economic characteristics but differ in percentage of hard-surfaced roads. We can arbitrarily subdivide the roads into intrafacility and extrafacility, depending on the users of the roads (local or general-purpose) over which the produce is hauled.

In the sovkhoses of Kustanay Rayon, the distances from the fields to the threshing floors vary from 5 to 27 kms, while the distances to the delivery points vary from 15 to 104 kms. The average cargo haul distance on the intrafacility roads is 5-8 km; the figure for the general-purpose roads is 29-40 kms. The magnitude of the losses (in terms of the volume of incoming or outgoing produce) is characterized by the following values: grain--from 0.5 to 5 percent; live animal weight--from 0.3 to 10 percent; hay--from 1.5 to 12 percent; silage--from 5 to 17 percent.

In the rainy season, the transport vehicles when avoiding the nearly impassable road segments run out onto the planted fields, the average width of the strip being 4.5 meters and in some areas reaching 20 meters or more. In the dry weather in the summer, the width of the dust-covered roadside strip reaches 200-250 meters. The grain crop yield drops by 5-10 percent because of this. Thus, our calculations show that, in Tselinograd Oblast, the losses along the local roads due to driving onto the planted fields are more than 1,500 quintals of grain a year, the comparable losses along the intrafacility roads are over 8,900 quintals, while the corresponding losses from dust coverage of the fields are 5,250 and 29,730 quintals.

Improved effectiveness of agricultural production is directly associated with the use of organic and mineral fertilizers. Poor roads lead to delays in fertilizer delivery and application, which also reduces crop yield.

At the present time, the "Ipatov" harvesting method is used in Kazakhstan. However, this method is not yet used as widely as it should be. This is also explained in large part by inadequate development of a good road network. The large field areas and the long distances between the farmsteads prevent timely transfer of machinery and hinder organization of harvesting at the best times from the agrotechnical viewpoint.

We believe that the problem of accelerated development of road construction requires urgent measures for its resolution. In spite of its large capital requirement, the construction of local and intrafacility roads provides rapid

return of the invested funds through savings on transport costs and elimination of agricultural produce losses.

We should always remember that realization of the government plan with respect to delivery of grain, meat, milk, fruits, and so on depends not only on mechanization, intense use of chemicals, and land reclamation but, also, on good roads. This is the goal of the "Basic Directions for Economic and Social Development of the USSR in 1981-1985 and in the Period to 1990."

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Actions Taken

Alma Ata SEL'SKOYE KHOZYAYSTVO KAZAKHSTANA in Russian No 9, Sep 81 p 42

[Comments on the preceding article]

[Text] It was emphasized at the 26th CPSU Congress that realization of the Party food production program is impossible without marked acceleration of the growth rates of the industries providing transport, storage, rational utilization and delivery of the final agricultural product to the user. In Kazakhstan, the local roads constitute 56 percent of the general-purpose roads, but only 45 percent are hard surfaced.

This was discussed in an article by Sozonov, Smirneva, Pasechenko, and Chumachenko published in the third number of the present journal in 1981.

In Tselinograd Oblast, the farmsteads of 21 kolkhozes and sovkhoses do not have reliable communication with the regional centers and 134 do not have good communication with their divisional farms.

The authors emphasized that, in the harvest period in central and northern Kazakhstan, large grain losses are incurred because of poor roads; in the rainy season, transportation comes to a stop; and excessive consumption of fuel, oil, and spare parts takes place.

We asked the managers and specialists of several oblast road departments to comment on the measures taken to improve the condition of the local roads. Their answers were as follows.

V. Vyshegorodtsev, director of the Tselinograd Department of Roads, said: "In the period of preparation for the 1981 harvest, our highway workers fulfilled the 6-month plan with regard to all the indexes. Sixty-nine kms of roads were subjected to major overhaul, 185 kms were subjected to medium repair. These are primarily the so-called grain shipment routes. We must admit that, during this 2-month period, several kolkhozes and sovkhoses were lax and paid inadequate attention to the important campaign for improving the condition of the intrafacility roads. In several regions, the road construction schedule was not met and the facilities were put into operation with considerable delay because of the failure of the farm personnel themselves, who did not allocate

adequate transport vehicles to the road workers. This situation is now being corrected."

V. Ozarichev, chief engineer of the North-Kazakhstan Oblast Highway Board: "The conclusion that poor roads cause loss of grain and many other materials is quite true. Our highway workers accomplished a lot in the first half of the year. The capital investment realization plan was carried out successfully. The Afanasyevka-Sadovka-Vsevolodka route and also the Bulayevo-Sovietskiy sovkhoz and the Pisarevka-Karagandinskiy sovkhoz segments were improved. During this 2-month period, the teams of the Presnov and Sergeyev Regional Highway Administrations were particularly successful in improving the condition of the grain shipment routes."

Yu. Aksenov, chief engineer of the Kustanay Oblast Highway Administration, said: "During the 2-month period prior to the grain harvest, about 8 million rubles were spent on road repair. Over 80 kms of hard-surfaced roads were put into operation and nearly 200 kilometers of old roads were repaired. More than 3,500 kms of intrafacility roads were graded. There were 135 trucks, 30 tractors, 10 bulldozers, and 10 loader-excavators involved in these operations every day. Seven mechanized repair crews were organized and put into operation. All the access routes to the elevators and grain collection stations and also the unloading ramps of these enterprises were investigated during preparation for the grain harvest. They were all basically in good shape. The deficiencies which were found have been corrected. We should note the good work of the production teams and management boards of the following regions: Lenin, Ordzhonikidze, Kustanay (which was criticized in the cited article), Uritskiy, and Komsomol Naurzum. The grain shipment routes in these regions are today in good shape."

In summary, we should note that not all has yet been completed by any means. We recall that realization of the government plan for delivery of grain and other agricultural products depends not only on mechanization, intensified use of chemicals, and land reclamation but, also, in no less degree on good roads, as was emphasized in the article headed: "Poor Roads Lead to Losses."

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MOTOR VEHICLE

CAUSES FOR SPARE PARTS SHORTAGE NOTED, SOLUTIONS SUGGESTED

Moscow KHOZYAYSTVO I PRAVO in Russian No 10, Oct 81 pp 70-72

[Article by L. Gorbunov, deputy director of the Division of Inspection and Customer Complaints of the AvtoVAZ [Volga Auto Plant] Production Association]

[Text] During the last decade, the total number of passenger cars in the USSR has increased more than fourfold. There are 8 million cars on the highways today. These cars are mostly driven by their owners, for whom the private car becomes at times not only a means of transport but also an object of special worry and vexation. Today the life of the passenger car is 10-15 years. Each car must be continuously supplied with spare parts throughout this period. Much has been done to date to develop the service program, which has demanded and will demand significant material resources.

Today, there are 80,000 people involved with auto servicing and the annual expenditures amount to hundreds of millions of rubles. Many cars owned by individuals are mothballed because of lack of spare parts. Therefore, the questions of regulatory support for the deliveries of spares for the cars belonging to individual citizens are very important.

At the present time, these deliveries are governed by the Directive on Deliveries of Consumer Goods and the Regulations on Delivery of Spare Parts for Agricultural Machines, Tractors, and Trucks. But these regulations were adopted merely 20 years ago and are obsolete in respect to supply of spares for passenger cars.

First, the organizations involved with production planning and allocation of funds for spares have changed. Previously, this function was handled by Goskomsel'khoztekhnika SSSR [State Committee for Agricultural Equipment of the USSR]; now it is under the Motor Vehicle Construction Associations of the Ministry of Motor Vehicle Production.

The AvtoVAZ [Volga Auto Plant], Moskvich and AvtoZAZ [Zaporozh'ye Auto Plant] production associations now supply the auto centers, specialized organizations of Avtotekhhobsluzhivaniye [Motor Vehicle Maintenance and Service] and the retail trade organizations with spare parts regardless of whether they are under the control of the production plants. Second, the spare parts consumers have changed. In 1964, the users were the oblast organizations of Sel'khoztekhnika

[Agricultural Equipment]. Today, the users are the oblast and republic associations of Avtotekhnobsluzhivaniye, the network of factory-operated repair stations and maintenance centers, the republic-wide supply centers, and the retail trade enterprises.

Therefore, the regulations governing supply of the consumers with spare parts require regulatory updating. We are convinced that the experience of the Avtotekhnobsluzhivaniye system enterprises and the AvtoVAZ production association, the manufacturer of the most widely used passenger car--the Zhiguli--must be considered. The rational organization of spare parts support for the company-operated maintenance network not only satisfies the demands of its clients in timely fashion but also provides valuable data on how the Zhiguli operates under various conditions. These data make it possible to continuously improve the design of the parts, reduce production costs, and improve the quality and reliability of both the spare parts and the vehicle as a whole.

We note that the volume of spare parts sold through the company-operated AvtoVAZ Production Association support system in 1981 reached 54 million rubles (in wholesale terms) and the overall volume of spare parts deliveries for the Zhiguli cars is about 170 million rubles.

This supply system can be improved primarily by developing new regulations for the delivery of spare parts for passenger cars.

The general provisions of the regulations must characterize the subject of delivery, that is, the regulation must define what is meant by passenger car spare parts. We suggest that this includes all parts fabricated from any materials which are now used or may appear in the future. But the regulation must also define the primary, basic materials required for fabricating the spare parts and overhauling the cars in order that the nature of the delivered article and its technical characteristics be defined sufficiently precisely. Such materials include metal, rubber, plastic, asbestos, glass, and other materials.

In the general provisions, we must outline the spare parts supply goals and channels. Since even today the primary passenger car customer (buyer) is the individual citizen and, in the future, the number of private-use cars will increase significantly, the majority of spares for these cars must be supplied to the retail trade network and to the auto servicing enterprises.

In addition, we need to determine the organization allocating the spare parts funds and establish what documents will serve as the basis for allocation of the spares funds and the requirements which these documents must meet, which enterprises can act as spares buyers, and the process for concluding the agreements.

The assignment to the associations producing passenger cars of the right to distribute and sell spare parts and the many years of experience of the AvtoVAZ Production Association make it possible to state that only the organization that produces passenger cars is capable of fabrication at the required level and properly distributing the spares for passenger cars. Here we need to consider that each such association has developed in practice a well-defined servicing system, which has a tendency to grow and develop. It appears to us that the

original production organization should be assigned the responsibility both for servicing the cars during the guarantee period and for keeping them in good condition.

How should spares distribution be set up in practice? Let us examine the method used at AvtoVAZ in production planning. The method is very simple. The producing plant approves the passenger car spares consumption norms for a definite period, which are multiplied by the number of cars in operation.

As a result, we obtain the number of spares required for servicing and overhaul. This planning method also takes into account several factors which are of significant importance. It is well known that the modern passenger car includes on the average about 2,000 assemblies, systems, and parts. The requirement for these units is different throughout the time of operation of the car and depends on the distance traveled, the climatic and road conditions, and other factors.

Although it is difficult to define the influence of these factors, the possibility of breaking the entire gamut of spare parts down into groups is obvious.

Thus, for the 1982 year, the Volga Auto Plant has broken the spares down into three demand groups with the following delivery schedules: group A parts are shipped every quarter; group B parts are shipped every 6 months, and group C parts are shipped once a year.

Of the 1,822 spare items for the Zhibuli VAZ-2101 car--the car with the highest production rate--there are 95 group A items, 235 group B items, and 1,492 group C items.

Experience shows that breaking the spares down into groups is, at the present, of paramount importance and will be so in the future. After defining the entire gamut of spares (including the demand-group breakdown), determining the number of passenger cars in operation, and computing the spares requirements for the planning period, we can turn to formulating the spares production plan. This is a complicated operation, since no single auto production association fabricates the entire range of parts. The assemblies, parts, and materials supplied by the enterprises of the allied branches of industry amount to from 30 to 50 percent of the cost of the car. Therefore, difficulties arise in planning the production of new assemblies and parts, both for initial production and for spares, the demand for which can be defined by the car production association after receiving purchase specifications [requisitions] from the customers--the Avtotekhhobsluzhivaniye and retail trade enterprises.

Unfortunately, to date not all the production associations have at the main plants large central warehouses that are capable of receiving the entire gamut of spares, both from the association itself and from the allied enterprises. Therefore, the spares produced by the association will be delivered to the customers by the association itself, while the spares produced by the allied enterprises will be delivered through their supply organizations. Here the spare parts production planning schedules should be established so that the lead plant will have a realistic time period for coordinating these schedules with the other enterprises producing spare parts.

At AvtoVAZ, a period of 6 months (from March to September of the preceding year) is set aside for developing the draft of the spares production plan. Only after establishing the spare parts requirements together with the other suppliers and picking the supply organizations and concluding with them agreements for delivery of spares in the required number and variety can we rationally distribute the funds among the various vehicle-servicing enterprises and the retail market.

In proposing to improve the procedure for supplying passenger car spare parts, we must bear in mind that the existing regulation has long provided for the introduction in the production-ministry enterprises of centralized planning of retail spares stocks for all types of articles. Moreover, in order to completely satisfy the requirements of the individual citizens for passenger car spare parts, this regulation has required that Gosplan USSR, Gossnab USSR, and the Ministry of the Automotive Industry develop and carry out measures directed toward broadening the spectrum of articles produced as spares; introducing a procedure in accordance with which the delivery of spares associated with all types of articles for the central republic-wide supply bases of the specialized supply enterprises of Avtotekhhobsluzheniye is accomplished by the plants which are the lead organizations for spare parts supply; and constructing central spare parts warehouses at the plants producing passenger cars and engines.

The economic and regulatory basis for the introduction of the new procedure for planning the production and distribution of spare parts for passenger cars for the retail market is already being developed.

The basic document confirming allocation to the buyer of spare parts funds will be the association (lead plant) production schedule. This production schedule must be forwarded to the buyers well in advance of the start of the delivery period. The production schedule must indicate the vehicle models for the overhaul and servicing of which the spares are allocated and the overall sum of the allocated funds. The production schedule should be accompanied by a detailed specification with indication of the overall number of allocated spare parts with a breakdown and total for the entire delivery period, the periods and dates of delivery for the various demand groups, and the number of spare parts which are to be delivered in each quarter and each month. The production schedule may be accompanied by additional stipulations governing the entire range of questions associated with delivery: quality of the spare parts, acceptance procedures, return of multiuse containers, size of the wholesale discount offered, and so on.

The present practice at VAZ is that the contractual agreements with the buyers are basically established by acceptance by the buyer of the lead plant production schedule for implementation. VAZ appends to the production schedule for the identified spare parts (together with the detailed specification corresponding to all the requirements) additional stipulations which govern all the questions associated with spare parts delivery. This procedure shortens significantly the time required for concluding the agreements and simplifies considerably the process of establishing the contractual agreements.

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MOTOR VEHICLE

ELECTRIC CAR IN LIMITED USE

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 27 Jan 82 p 4

[Article by A. Ignat'yev and O. Kapustin, Moscow: "What Does the Voltmeter Read? — Report from the Electromobile"]

[Text] They say that the electric car is almost as old as the century. All this time its supporters have been saying that it will supplant vehicles with internal combustion engines in our cities.

Now the experiment has begun to take on real form. The transportation workers of Moscow have taken the initiative. 1982 has become the date of series production of electric vehicles in our country. The first enterprise, with 25 electric trucks, has been formed in the capital.

It was 20 degrees below zero when your TASS correspondents went out to become acquainted with the truck. At such a low temperature the operating reliability of the storage batteries is greatly reduced or they simply freeze up.

But the vehicles were leaving on their routes one after another as if nothing were wrong. Cold weather does not frighten the electric vehicle: it spends the night in a warm garage, and during the day it keeps itself warm.

The journalists went on a run with fleet driver S. Alferov. He punched the electric switch and our "Uazik" [vehicle from the Ul'yanovsk Automotive Plant] sped off through the streets.

It was warm and unusually quiet in the cab.

"How far can such a vehicle go?" the reporters asked.

"I have a voltmeter on the instrument panel," the driver said, pointing. "With it it is easy to determine the number of kilometers left. We can go several dozen more kilometers without worrying."

The truck blends into the flow of city traffic very well. And after stopping at a traffic light it picks up speed quickly and easily. The passengers pointed out that the indicator arrow of the voltmeter was fluctuating in the negative range.

"That is the batteries recharging," the driver explained. "While braking and slowing down the engine acts as a generator, converting the energy of motion into electricity."

We watched the driver and it seemed easy to drive the vehicle. Simply step on the gas pedal, and sometimes the brakes. After all, the electric truck has no clutch or gear shifts.

At the first stop while the truck was loaded with box lunches for school children the driver connected the cord to a plug to recharge the batteries. This takes the place of the gas pump.

After the trip the journalists talked with V. Fedotkin, deputy chief in charge of scientific work for the electric vehicle enterprise.

"Four plants in the country have been commissioned to deliver electric vehicles," Vladimir Ivanovich said. "At present we have a small fleet, but by the end of the five-year plan it will increase to 400 units."

"Is the objective to gradually replace vehicles with gas engines in the cities?"

"No. Electric transportation is more efficient in large cities for hauling small loads. Vans with load capacities of around half a ton are more valuable for trips with many stops and a lot of maneuvering through city streets."

Another advantage of these vehicles is the absence of noise, as well as the fact that they do not pollute the air. The electric trucks, along with street cars and trolley buses, are the forms of transportation that are not harmful to the environment.

"How profitable is the electric vehicle in comparison with a conventional vehicle?"

"You can't compare vehicles which have been produced in series running into the millions for many years with the first electric vehicles. After all, we are just at the beginning of industrial production of these new vehicles, and introducing them always involves expenditures. When aluminum aircraft fuselages began to be built, people joked, as you know, that it would be cheaper to make them out of ruble notes. The joke has been forgotten, and people have learned to produce strong reliable aluminum alloys without special expenditures."

The design of the electric vehicles is being refined. In two or three years, according to the program, scientists plan to build storage batteries whose working life will be twice as long. This will greatly reduce the cost of operating the vehicles. But even with existing types of batteries one recharging is enough for a 40-kilometer trip. Incidentally, the distance is more than half of the ordinary daily run of the vehicles that serve stores in the city.

MOTOR VEHICLE

BRIEFS

NEW HIGHWAY—The road from Sevan to Vardenis in Armenia has been opened to traffic. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 47, Nov 81 p 5] 11176

COMPUTER HELPS ORGANIZE TRANSPORTATION—Tallinn—The "Tramod" mathematical model developed by Estonian scientists helps solve city transportation problems more quickly. Before rebuilding one of the major intersections in Tallinn, they installed sensors there to record the number of vehicles passing, their speed, and the directions of travel. The computer processed the data collected and produced an optimal traffic scheme. The builders used it in reconstructing the intersection. "At the request of motor vehicle enterprises in the city we calculated the most economical routes for their trucks," said R. Sillat, head of the department of motor vehicle transportation of the Tallinn Polytechnic Institute and one of the authors of the "Tramod." "As a result we cut fuel use and reduced traffic on the main transportation arteries. When roads and streets are being repaired we use the model to determine new stops for transportation vehicles. The 'Tramod' helps employees of the traffic service, the motor vehicle inspectorate, and road builders." [Text] [Kiev PRAVDA UKRAINY in Russian 13 Dec 81 p 1] 11176

NEW FARM TRUCKS—Yaroslavl'—The new KAZ-4540 truck train for agricultural purposes had been adopted for series production at the Kutaisi Automotive Plant. The Yaroslavl' Engine Plant has incorporated production of its powerful engine. It is a six-cylinder engine of original design, standardized with the KamAZ engine. It has 160 horsepower. The engine was designed in the design administration of the Avtodizel' Association. The new, original power plants with the Yaroslavl' brand went through testing successfully and were highly praised by the people from the Georgian automotive plant. [By V. Kurapin] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 13 Dec 81 p 1] 11176

NEW COLD-WEATHER TRUCK—Miass (Chelyabinskaya Oblast), 28 Dec—The designers at the Ural Automotive Plant have developed the Ural-432001 truck tractor. It is based on a gasoline engine truck but has a more powerful diesel engine modified for northern use. At the start of this year the new truck was tested for two and one-half months in the Oymyakon region of Yakutia. Faced with roadless conditions, snow drifts, and temperatures down to -60 degrees, all elements of the vehicle, the engine, starter warmer, cab heater, and braking system passed the test. After taking the suggestions of the test drivers into account,

plant specialists prepared the truck for acceptance by the interdepartmental commission. The other day the commission recommended that the truck be put into production. [By F. Chursin] [Text] [Moscow PRAVDA in Russian 29 Dec 81 p 6] 11176

NATURAL GAS VEHICLE—Gor'kiy, 10 Jan (TASS)—The designers at the Gor'kiy Automotive Plant are calling the GAZ-5227, which has gone into production at the enterprise, the "vehicle for the city." Although outwardly similar to the base model GAZ-5204, this vehicle has pressurized gas tanks in a recess under the body. Instead of gasoline the engine uses natural gas, which is much cheaper than refined petroleum products. The exhaust emissions of the natural gas engine are one-third to one-fourth as toxic as those of conventional gasoline engines. This means that the truck is practically harmless to the environment. The vehicle has four tanks, which give it a range of 200 kilometers. [Text] [Moscow PRAVDA in Russian 11 Jan 82 p 1] 11176

TBILISI BYPASS HIGHWAY—Tbilisi—The Tbilisi bypass highway whose construction has begun in the capital of the republic will reduce travel time through the city by two-thirds. The new 40-kilometer route will take tens of thousands of through trucks and cars off the transportation artery of Tbilisi. The bypass begins at the Kakhetinskoye Highway and goes to the Georgian Military Road. The circle road around Tbilisi, whose design was authored by specialists at the Tbil giproavtodortrans [Tbilisi State Planning Institute for Motor Vehicle Transportation and Highways] Institute will permit a significant increase in the speed of freight movement and improve traffic safety. [By G. Namtalashvili] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 12 Jan 82 p 2] 11176

AMPHIBIOUS ARCTIC TRACTOR—Murmansk, 26 Dec—The design of the TPGA amphibious tractor, which was developed by specialists at the Onega Tractor Plant in Karelia, has been tested under Arctic conditions. This plant also supplied most of the parts and mechanisms for assembling the tractor, but assembly was done at the Murmansk Ship Repair Yard of the USSR Ministry of the Maritime Fleet. Arctic testing showed that the tracked amphibian can tow cargo pontoons from on board ship to a rocky shore and is irreplaceable in operations in near-shore water with shallows that make them inaccessible to the ordinary boat launch. The shipyard workers have now assembled a second tractor and are working on the third. All three experimental models of the amphibious machine will work in the Arctic, delivering cargo to shore, in the coming navigation season. [By A. Khramtosov] [Text] [Moscow PRAVDA in Russian 27 Dec 81 p 1] 11176

NEW GAZ-3102 CAR—Series production of the new GAZ-3102 car has begun at the Gor'kiy Automotive Plant, which celebrates its 50th anniversary today. Greater engine power, an original body shape, and a number of other technical innovations enable this vehicle to develop a maximum speed of 150 kilometers an hour. It takes just 16 seconds to reach a speed of 100 kilometers an hour. The four-cylinder engine with injection fuel supply combined with radial tires reduces fuel consumption by 10-18 percent. The toxicity of exhaust gases meets accepted standards fully. The halogen lamps of the headlights, the

water washing system for them, the stereo player instead of the usual radio, and the comfortable interior are distinguishing features of the new Volga. Its service life until overhauled will be 350,000 kilometers. [Text]
[Moscow TRUD in Russian 1 Jan 82 p 1] 11176

SMALL ELECTRIC TRUCK—Georgian SSR—The Batumi Electrical Machine Plant has begun production of the ET-2047-L small electric truck. It is designed for further mechanization of loading and unloading work at airports. [Text]
[Moscow EKONOMICHESKAYA GAZETA in Russian No 3, Jan 82, p 18] 11176

REPAIR PLANT OPEN—The first stage of the plant for capital repair (overhaul) and technical servicing of Czechoslovakian Tatra vehicles has begun operations in Nizhnevartovsk. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 48, Nov 81, p 5] 11176

CSO: 1829/121

RAILROAD

RAILROAD PERFORMANCE FIGURES FOR 1981 GIVEN

Moscow GUDOK in Russian 27 Jan 82 p 1

[Text] The railroad workers, just like all Soviet people, are persistently and purposefully struggling to successfully implement the historic decisions of the 26th CPSU Congress. Many railroad workers marked the first year of the 11th Five-Year Plan with labor successes.

The railroad transportation system operated in complex conditions during 1981 and successfully dealt with the plan for overall freight shipments. The plan for shipments of grain, potatoes, vegetables, fruits, sugar-beets, sugar and a series of other foodstuffs, plus cotton and shale, was fulfilled ahead of schedule.

Compared with 1980, the volume of freight shipments increased by 35 million tons, for a total of 3.746 billion tons. There were significant increases in shipments of petroleum products, heat-resistant materials, cement, industrial raw materials, molded materials, chemical and mineral fertilizers, chemicals, sodium carbonate and consumer goods.

Twenty-six railroads fulfilled the year's plan for overall freight shipment. The Baltic, Odessa, Volga, Central Asian, Krasnoyarsk, East Siberian, Far Eastern and Baykal-Amur railroads attained the highest growth rates for freight transport. The plan was not met by the Gorkiy, Northern, Dnepr, Donetsk, Kuybyshev and Kemerovo railroads.

As was noted in the report from the USSR Central Statistical Administration, published a few days ago, "There were serious shortcomings in transportation work, particularly railroad work. The national economy's needs for transport of a number of the most important types of freight, as well as passengers, were not fully provided for."

The plan for prescribed categories of freight is not being fulfilled by a number of railroads. This often leads to difficulties in the work of enterprises in various sectors of the national economy. Managers at stations and divisions must increase their supervision of certain kinds of shipments, particularly fuel, energy, foodstuffs and metallurgical ores.

The proportion of through train use was 47.4 percent. This was an increase of 0.6 percent, compared to the previous year. Coal shipments on through trains

increased by 0.7 percent, flux shipments by 2.5 percent, iron and manganese ores by 0.8 percent, chemical and mineral fertilizers by 2.2 percent, industrial raw materials and molded materials by 1.9 percent and cement shipments by 2.3 percent. The largest increase in use of through trains was on the Baltic, Odessa, L'vov, Volga Sverdlovsk, West Siberian and East Siberian railroads. At the same time, there was a reduction in use of through trains on the North Caucasus, Donetsk, Dnepr, Kuybyshev and Transbaykal railroads.

Utilization of freight car capacity was improved on most railroads. For the rail network as a whole, the average freight load was increased by 250 kg (the task called for a 150 kg increase). Exceeding the task for this indicator enabled the railroads to handle almost half of the entire increase in shipments without enlisting the aid of additional freight cars. The effect would have been more significant if all the railroads had dealt with the task. In particular, the average freight load on the Donetsk railroad was 0.26 tons lower than the plan and this resulted in the loss of resources which could have handled 1.6 million tons of freight. On the Tselina railroad the corresponding figures were 0.47 tons and 1.1 million tons of freight; on the Sverdlovsk, 0.34 and 1.4; on the Kemerovo, 0.2 and 0.7; on the Gor'kiy they were 0.23 tons and 0.6 million tons.

Most railroads did not meet the year's plan for unloading freight. Local freight exceeded the norm by 10 to 30 percent on the Moldavian, Azerbaijan, Far Eastern, Odessa, Transcaucasian, South Urals, Central Asian and Oktyabr'sk railroads.

Freight traffic was 3.507 trillion scheduled ton-kilometers. Compared with 1980, this was an increase of 67 billion ton-kilometers or almost 2 percent. Half of this gain resulted from an increased volume of transport. The other half resulted from a 9-kilometer increase in the average transport distance. For iron and manganese ores, the average transport distance increased by 22 kilometers; for heat resistant materials the increase was 12 kilometers; for lumber it was 20; for metal structures it was 39; for industrial raw materials and molded materials it was 25; for nonferrous ore, sulphuric raw materials and construction materials it was 13 kilometers. At the same time, the average transport distance decreased for grain and petroleum shipments, mineral fertilizers and a number of other products.

Only eight railroads, including the Donetsk, North Caucasus, Azerbaijan, Central Asian and Western Kazakhstan railroads, fulfilled the plan for freight traffic. Freight traffic was less than planned by 58 billion ton-kilometers or by 1.6 percent.

Compared to 1980, passenger transport increased by 17.5 million persons. Passenger traffic was 344 billion passenger-kilometers. Compared to 1980, passenger traffic increased by 12 billion passenger-kilometers or by 3.6 percent. Moreover, more than 90 percent of the increase is due to long-distance trips. Only 14 railroads dealt with the task successfully. The rate of increase for passenger traffic was 3.5 to 8.7 percent on the Sverdlovsk, Far Eastern, Dnepr, L'vov, Northern, Krasnoyarsk, Moscow, Southwestern, Gor'kiy, Southern, Odessa, Donetsk, East Siberian and Transbaykal railroads. The average distance for passenger transport increased by 3 kilometers overall and by 6 kilometers on through traffic.

The average number of passengers per car increased. On many railroads, particularly in the Urals, Siberia and the Far East, more passenger trains began meeting the schedule and there were fewer delays in arrival times at final destinations.

The indicators for rolling stock utilization improved somewhat.

Rolling stock turnaround was accelerated on 19 railroads. This allowed the turnaround to be reduced by 2.9 hours for the rail network as a whole. Ninety percent of this time savings resulted from reduced idle time during loading operations and at maintenance stations. The Moscow, Donetsk, West Kazakhstan, Tselina, West Siberian and Krasnoyarsk railroads successfully dealt with the task for freight car turnaround.

Average locomotive productivity increased by 11,000 gross ton-kilometers. This increase was attained by increasing the average daily run for locomotives by 1.1 kilometers and the average freight train weight by 20 tons. Locomotive productivity was higher than planned on six railroads. The task for average train weight was fulfilled by 15 railroads, with the largest increases on the Moscow (54 tons), Azerbaijan (47 tons), Southeastern (36 tons), Alma-Ata (43 tons) and Central Asian (72 tons).

Overall freight car interchange between railroads increased by 6,300 cars.

The norms for electrical power expenditure in hauling trains were fulfilled by the rail network as a whole. More than 900 million kilowatt-hours were saved during the year. Also, more than 200,000 tons of diesel fuel were saved. There were overexpenditures of power on four railroads: the Azerbaijan, Kuybyshev, Alma-Ata and West Siberian.

The material and technical base for transportation was further developed. The railroads were supplied with 474 electric locomotives, 618 main line diesels, 476 switching diesels, about 63,000 freight cars, 2,695 passenger cars and 50,200 freight containers. The plants which supplied these items had a delivery shortfall of almost 7,000 freight cars, 159 passenger cars and about 20,000 freight containers.

The overall volume of capital construction and building and installation work exceeded the 1980 level somewhat, mainly due to assimilation of equipment at construction sites connected with increasing the lines' traffic capacity. The organizations of the Ministry of Transport Construction implemented the plan for railroad construction sites (excluding the Baykal-Amur Main Line) at the 90.7 percent level. There was particularly large shortfalls on the East Siberian, Far Eastern, Southern, Oktyabr'sk and Odessa railroads.

The plan for introducing housing was missed by 131,000 m². There were particularly large shortfalls on the Oktyabr'sk, Far Eastern, West Siberian and Kemerovo railroads. The plan for putting hospitals, polyclinics and preschools into operation was not fully met.

The industrial enterprises for railroad transport did not meet the year's task for salable output and for production of many articles listed in the national

economic plan. The volume of salable output was R1.987 billion. This is 1.3 percent higher than the 1980 level, but 0.3 percent lower than planned. Output was short of the task by R6.5 million, including a R4.4 million shortfall by Ministry of Railways plants for repairing rolling stock and producing spare parts.

The plan for major repairs to electric locomotives, diesels, electric units and for output of switches was not entirely fulfilled.

Compared with the previous year, labor productivity for operational workers increased by 0.8 percent. This is lower than specified in the task. Only 10 railroads successfully dealt with the plan for this critical economic indicator, including the Moscow, North Caucasus, Odessa, West Kazakhstan, and Central Asian railroads. The largest shortfalls were on the South Urals, Far Eastern, Tselina and Transcaucasian railroads, where output declined, compared to 1980. The decline was mainly due to the practice of keeping a group of workers committed to a volume of work which had already been carried out and also to significant losses of working time. For the rail network as a whole, overtime decreased by 5.7 percent and idle time decreased by 6 percent, due to improved organization of labor and operational work.

There is a lot of work which must be done by the railroads and divisions to eliminate shortfalls of the 5-year plan's tasks for increased labor productivity and to assure that there is strict and universal observance of the proper relationship between output rates and wages.

Guided by the decisions of the November (1981) CPSU Central Committee Plenum and by the tenets and conclusions in Comrade L.I. Brezhnev's speech at the plenum, every enterprise and section must thoroughly analyze the results of the year's work and mobilize the railroad workers for the struggle to successfully fulfill the plan's intensive tasks and the socialist obligations for the second year of the 11th Five-Year Plan.

This article is based on information from the Ministry of Railways Statistical Accounting and Reporting Directorate.

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RAILROAD

L'VOV SYSTEM FOR IMPROVED CAR USE DESCRIBED, RESULTS GIVEN

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[Article by M.N. Grabskiy, chief of the L'vov Divisions of the L'vov Railroad:
"A New Form of Labor Cooperation"]

[Text] L'vov. The railroad workers at the L'vov, Persenkovka, Sambor, Kleparov and Drogobych stations of the L'vov Division, along with transport workers at the L'vov Bus Plant, the Avtopogruzchik [Fork Lift Truck] industrial association and a series of enterprises in Drogobych are persistently striving to make more efficient use of freight handling resources. These workers have accepted joint socialist obligations and have developed comprehensive plans for organizational and technical measures to reduce idle time for freight cars. Based on these actions, the Comprehensive System for Efficient Utilization of Freight Cars (CSEUFC) was created. This system is a specific instance of using the experience gained by the party organizations and workers at the advanced industrial enterprises in L'vovskaya Oblast in introducing the Comprehensive System for Quality Control of Production (CSQCP). The CPSU Central Committee has approved the use of such experience.

The main provisions of the CSEUFC provide for constant improvement in production processes, which will assure that the degree of freight car use corresponds to the needs of the national economy and hence, that there will be a systematic increase in transportation productivity. The CSEUFC is directed toward creating the optimum conditions for transport and improving the efficiency of rolling stock use on spur lines, even during the project planning stage for construction (renovation) of industrial enterprises. It is also directed toward making maximum use of freight car capacity and tonnage by developing and introducing advanced technical standards for loading freight cars. The system defines the mutual obligations and responsibilities of railroad stations and industrial enterprises for efficient use of every freight car.

To improve the CSEUFC's effectiveness at railroad stations and industrial enterprises, measures were implemented to improve freight transport planning, make more efficient use of freight traffic, organize control over efficient use of freight cars and maintain the freight car fleet in good condition. Along with these measures, problems were resolved involving scientific ways to establish performance standards for freight car idleness during loading and unloading, assurance of an even work flow during a day or week, cooperative use of switching locomotives and other equipment, organization of loading combined groups of freight by destination, etc.

As is well known, the CSEUFC presupposes the development and introduction of standards for carrying out the basic technological operations connected with using freight cars. These standards determine the functions and interrelations of the sections participating in transportation and enable basic demands to be united with freight car use. At the enterprises where the CSQCP is used, the standards for efficient use of freight cars are a component part (element) of the enterprise's overall production system.

Within the framework of the CSEUFC, planning rates are established for fulfilling the monthly loading and unloading tasks and freight car idleness is calculated. Also, organizational, technical, economic and other measures are developed to more fully satisfy the national economy's needs for transportation and to eliminate transportation bottlenecks so that the final goal can be achieved--reduction of freight car idleness and obtainment of additional freight handling resources.

Putting the CSEUFC into practice promoted improvement of work methods at stations and spurlines, increases in the amount of equipment at the industrial enterprises' transport shops and extensive development of the socialist competition for increasing efficient use of freight cars.

Control of Freight Car Utilization

The division chief controls the CSEUFC and manages its development, introduction and constant improvement. In the division, the Coordination Work Group (CWG) directly manages the development and introduction of standards. CWG's are also formed at stations which have a large volume of work. The Division Technological Group develops standards for way stations.

Station masters assure the development and introduction of standards for the enterprises which service the spur trucks. They also do the planning and calculation of car-hour use for loading and unloading operations on spur lines, as well as monitor the fulfillment of obligations, organizational and technical measures.

At present, more than 50 stations and 340 industrial enterprises in the L'vov Division are operating according to the CSEUFC. Three hundred sixty standards for the stations and more than 490 for the industrial enterprises have been developed.

The standards for the enterprises which are the organizational and technical basis of the CSEUFC, are established in a functional manner. These standards include meeting progressive, scientifically-based norms for freight car idleness during loading and unloading, providing for timely execution of freight handling operations, maintaining freight handling machines and mechanisms in good working order. They also include extending spur lines, protecting rolling stock during freight handling operations, making maximum use of freight car capacity and tonnage by introducing progressive loading norms, and protecting freight. In addition, the standards provide for an orderly method of providing and withdrawing freight cars, collecting and analyzing information, evaluating and promoting the quality of labor and encouraging enterprises to be economical in using rolling stock. The standards were developed on the basis of the rules in the USSR Railroad Regulations, Freight Transport Rules, and other guiding documents. In developing the standards, considerations were also given to operational conditions on spur lines.

The basic criterion for freight car utilization in the CSEUFC is the expenditure of the month's planned car-hours in executing freight handling tasks. Enterprises which save car-hours are encouraged by being given freight cars above the planned level. In addition, they are credited with a bonus of 18 kopecks for each car-hour saved. These enterprises are the first to receive freight cars for loading.

Enterprises which exceed the average for freight-car idleness lose their right to freight cars. When the loading plan for a given 24-hour period is not met due to a lack of freight cars at the railroad station, the responsibility, according to the freight registration form, rests with the shipper, in losing the requisite freight-handling resources, due to his overexpenditure of car-hours.

For each 24-hour period, savings and losses of car-hours are entered in the register of freight cars provided and withdrawn. Calculation of freight car idleness is done for each enterprise. The 24-hour norm for car-hours is established as part of the monthly limit and the 24-hour volume of work. The norm is based on prescribed and contractual idleness norms for cars provided for loading operations. The planned norm and the actual expenditure of car-hours in carrying out the plan's tasks are reflected in the "Register for Calculating Fulfillment of Planned Norms for Car-Hours on Spur Lines, Based on the CSEUFC."

According to the CSEUFC's conditions, those enterprises which permit losses in car-hours are deprived of the ability to appeal to higher and directive-issuing organs with demands that the railroad allot freight cars to them (even according to plan) during certain periods of general difficulty in fulfilling the transport plan. This distinguishing characteristic and main feature of the CSEUFC encourages good final results in freight car utilization. Therefore, the managers of enterprises, while directing the workers' efforts toward fulfilling the plans for production and sale of output, are striving to develop their transport capabilities to keep up with basic production and assure low-levels of freight car idleness during loading operations.

This formulation of the issue forces the managers on a daily basis to monitor and analyze the fulfillment of the 24-hour norms for car-hours. In turn, this activity will improve the final results of the enterprises' work over 24-hour and 10-day periods. Monitoring the fulfillment of the planned norms for car-hours every 24 hours will allow the managers to recoup, during the month, the losses which occur.

The CSEUFC consists of four subsystems. The first one is "reaching agreement on designs for constructing railroad spur lines and accepting the lines for permanent operation." This includes standards which reflect the sequence of work from the moment when the adjacent site for spur tracks is chosen and agreement is reached on designs until the construction is completed and accepted for operation. This subsystem provides for creating optimal conditions for organizing transport, increasing the efficiency of rolling stock use and reducing the amount of freight car idleness during loading operations.

The subsystem's set of standards establishes common and basic rules which are obligatory for all subdivisions of a line. The rules deal with the procedures of appointing a commission to select a site for spur tracks adjacent to industrial

enterprises and organizations, preparing and drawing up the documents to select the adjacent site, reaching agreement on designs for building spur tracks and equipment, monitoring the construction in accord with the agreed-upon design and the technical conditions issued by the railroad management. The standards also establish the procedure for accepting newly-constructed spur tracks for permanent operation. The subsystem's standards are directed towards assuring that, even during the stage when technical conditions for developing the construction (renovation) design are issued, measures and design decisions will be planned to assure fulfillment of CSEUFC requirements.

The second subsystem is the "system of standards for operating the spur lines" and consists of five standards. The first standard establishes general conditions and interrelations between the proprietors of the branch lines and the railroad in executing loading operations and servicing the spur lines. The other four standards set up requirements for maintaining and supplying equipment on the spur lines, basic principles for operating and servicing the spur lines, procedures for analyzing work results and basic directions for developing organizational and technical measures.

The third subsystem is "basic rules for planning and calculating car-hours and fostering the reduction of freight car idleness on spur lines and at stations, on the basis of the CSEUFC." This provides for basic principles in planning and calculating car-hours and encouraging the enterprises. In particular, as was indicated, the subsystem's standards determine the material responsibility of enterprises and railroad stations for violating the CSEUFC conditions of freight car use.

The subsystem establishes the procedure for planning the car-hour norms for every enterprise, based on the detailed plan for loading during the ensuing month and the actual unloading during the past month. The subsystem defines the responsibilities of industrial managers in preparing a statement of requirements for a needed quantity of freight cars. It also defines the responsibilities of the station master in planning a car-hour norm and bringing it to the attention of industrial enterprises. The corresponding standard provides for calculating car-hour use, determining a bonus for saving car-hours, as well as adjusting the norms, monitoring and analyzing their fulfillment. Moreover, this subsystem sets forth the procedures for encouraging industrial enterprises and stations to reduce freight car idleness and the measures to exert pressure when CSEUFC conditions are not met.

The fourth subsystem is the "system for controlling the efficient utilization of freight cars in common-use areas by means of common work techniques." It establishes basic principles for interrelations among stations, mechanized freight handling divisions, shippers and freight consignees during loading operations.

The Efficiency of the Comprehensive System

Due to the introduction of the CSEUFC, losses of car-hours sharply decreased on spur lines. Thus, in 1975 for the divisions as a whole, approximately 775,300 car-hours were expended nonproductively on spur lines. In 1978, the losses had decreased by more than 290,000 car-hours and in 1980, by another 86,000 car-hours.

Freight car idleness on spur lines decreased systematically. In 1975, the cars were idle for 5.79 out of every 24 hours. In 1979, the figure was 5.45 hours; in 1980, it was 5.41 and in the first 6 months of 1981 it was 5.23 (the norm was 5.27 hours). At present, more than 50 percent of the enterprises serviced by the division are staying within the prescribed norm for car idleness.

The experience of working according to the new conditions for planning and fostering freight handling resources has demonstrated the great effectiveness of this undertaking. The CSEUFC has a positive influence on reducing freight car idleness. It requires constant improvement of work techniques at stations and on spur lines. It also requires increasing the amount of equipment at industrial transport shops and developing creative initiative among all workers, directed towards increased efficiency in utilizing rolling stock.

Thus, the workers at the L'vov Bus Plant were using rolling stock in an unsatisfactory manner and were permitting considerable delays in freight car use. Development of the transport facilities at this enterprise began with the fundamental rebuilding of the railroad section. Organizational and technical measures were developed jointly, with the Persenkovka station. Strict monitoring was established for the execution of these measures. New spur tracks and a covered loading platform were built and put into operation at the enterprise, as were overhead and gantry cranes with 20- and 30-ton lifting capacities. The cranes were equipped with electromagnets for loading work. The plant also put into operation two diesel engines for switching work, fork-lift trucks and electrical fork-lifts. Moreover, a press for packing scrap metal was installed, which made it possible to speed up loading operations and greatly improve utilization of the open-top rolling stock's tonnage and capacity. Introducing this method for packing scrap-metal freed about 400 freight cars per year for other work. Using more compact loading methods (three buses per coupled pair of flatcars) freed an additional 500 cars per year and saved R56,000 in operational expenses.

The engineers at the plant's transport shop developed progressive work techniques which provided for accelerated processing of freight cars arriving at the station. The shop's party organization instituted special supervision of round-the-clock loading and unloading of freight cars, as well as the shop's work on holidays and days off for the rest of the plant. Competition was developed extensively between the railroad workers and the bus plant workers to efficiently use rolling stock and eliminate bottlenecks.

Creation of combined mechanized labor teams in the railroad shop helped reduce freight car idleness and improve labor productivity. The teams included freight loaders, workers who tie down freight, train make-up workers, switching locomotive engineers, crane operators and fork-lift drivers. Rules for an intra-shop socialist competition were worked out. The combined teams succeeded in reducing the norms for car idleness and were rewarded with special seats on trains and cash.

Comradely mutual assistance was extensively developed among the workers at the plant and station. Thus, the transport shop's switching locomotive, when needed, worked on the spur tracks of the rayon Goskomsel'khoztekhnika [State Committee for Supply of Production Equipment for Agriculture] association, the construction materials plant and others. A center for minor repairs to freight cars involved

in loading operations was formed in the railroad shop. In all, approximately R2.5 million were invested in developing the bus plant's transportation facilities during the last few years.

Close working contacts and comradely mutual assistance enabled both groups of workers to greatly decrease freight car idleness on the bus plant's spur tracks. During the first 6 months of 1981, car idleness was 4.21 hours out of every 24, while the idleness norm was 4.34 hours. Due to the car-hours which were saved, the enterprise received additional cars to load output over and above the plan.

For a long time, the Avtopogruzchik production association exceeded the norm for freight car idleness during loading operations. After switching to the new system for planning and fostering freight handling reserves, the work of the plant's transport shop improved: the unloading bays were expanded, an additional crane was installed and a system of bonuses for saving car-hours was instituted. As a result, freight car idleness in 1979 averaged 3.84 hours per day, while the norm was 4.29 hours; in 1980, idleness averaged 3.77 hours, while the norm was 3.96; in the first half of 1981, idleness averaged 3.74 hours and the norm was 4.2.

The workers at the Ukrzapadugol [Ukraine Western Coal] association entered the competition for efficient utilization of freight cars. They laid additional tracks at stations and between stations, reinforced the roadbed and expanded the loading bays at the mines. The amount of loading work performed at night was increased to 56-60 percent of the daytime level and mechanization of freight handling operations increased to the 94 percent level.

A progressive method was developed and put into practice for serving the Selets-Zavone station with the association's two locomotives and the diesel engine from the Gornyak station. Through trains were organized in stages to include groups of freight cars from the Chervonograd and Gornyak stations. In the first 6 months of 1981, the neighboring enterprises saved more than 19,000 car-hours.

The L'vov and Ivano-Frankovsk obkom bureaus of the Communist Party of the Ukraine approved the experience gained in the socialist competition between the neighboring workers at the Ukrzapadugol association, and the stations at Gornyak, Selets-Zavone and Chervonograd. The competition sought to increase the efficient use of rolling stock, accelerate freight deliveries and reduce freight car idleness during loading operations.

The new system for fostering freight handling resources promoted the accelerated development of the transport shop at the Drogobych Petroleum Refinery. The pumps used in filling and emptying containers of petroleum products were replaced at the refinery with more efficient equipment, as was the conveyor for loading paraffin. The capacity of the coke bins was increased. As a result, freight car idleness in 1980 declined by 0.21 hours, which made it possible to save more than 400 freight cars' worth of freight handling resources. So far in 1981, idleness has declined by another 0.11 hours.

There were other enterprises where the transportation and storage facilities improved significantly and the technological level of work increased. Thus, on the spur line of the Karpata [Carpathia] Furniture Company, the bay used for simultaneous loading and unloading operations was enlarged and the warehouse for finished

products was expanded. Semi-finished furniture items arrive packaged and are unloaded from a freight car in 1 hour.

A plan for more compact loading of furniture was developed which enabled up to 150 freight cars per year to be freed for extra loading operations.

Progressive technology for freight handling operations is being successfully introduced at the reinforced concrete products plant in Stryy, the potassium industrial combine in Stebnik and the Goskomsel'khoztekhnika association in Sokal' Rayon.

Railroad workers improved the technological level of work at the Drogobych, Sknilov, Sambor, Podzamche and Rozdol stations. New machinery was put into operation at the Krasne, L'vov, Sknilov, Gorodok, Drogobych and Sokol' stations. Additional switching locomotives were provided to the Sknilov, Khodorov and other stations. Other organizational and technical measures are being taken.

During the last 5-year plan in the L'vov Division, more than 366,000 car-hours, or more than 12,000 freight cars' worth of freight handling resources, were saved due to more efficient utilization of rolling stock and reduced idleness during loading operations. Just in L'vov Oblast during 1980, enterprises which saved car-hours were paid R9,700 in bonuses and were provided approximately 7,700 additional freight cars.

The primary organizations of the division's Scientific and Technical Society [STS] made an important contribution to the development and introduction of the CSEUFC. During the training period for the CSEUFC, these organizations conducted economic and technical studies for station masters, shipping and receiving officers and freight payment officers. In these studies, the mission of the CSEUFC and the procedures for developing and introducing standards were examined in detail. Explanations of the CSEUFC's basic provisions and definition of the quality of freight car utilization, based on car-hour expenditures, took place at all industrial enterprises in the oblast.

M. R. Kril', Ya S. Khristianin, R.D. Vasilenko, V.N. Topchiy and V.I. Pidgurskiy are members of the STS primary organizations at the Sambor, Kleparov, Perenkovka, Stryy and Drogobych stations. These men corrected work techniques at stations and industrial enterprises and implemented measures directed toward further increasing the efficient utilization of rolling stock.

The leading workers in the division--STS members N.G. Katsev, K.A. Nevedomskiy, Yu N. Sakharuta, V.I. Zavalishin, M.A. Momot and others--organized, directly at work positions, the study of the new system by all workers in railroad stations and industrial enterprises. V.S. Grimalovskiy, B.V. Stetsa and V.I. Sergiyenko, members of the STS Rayon Council, developed the basic standards for stations and industrial enterprises. They had a direct part in preparing methods aids and basic documents for developing and introducing the CSEUFC. The STS Council published a special methods aid "Standards for Enterprises Using the CSEUFC" and an informative leaflet "The Goal Is To Save Car-Hours."

All this allowed freight car idleness just during loading operations at stations to decline in the first half of 1981 by 0.7 hours at Sambor and Drogobych, 0.1 at

Kleparov, 1.4 at Persenkovka and 1.1 at Stryy. For the division as a whole, freight car idleness just during loading operations declined by 0.41 hours and more than 15,300 car-hours were saved.

Working according to the CSEUFC provides for material encouragement of workers at stations and rail enterprises to save car-hours both on spur tracks and on common-use tracks. With this goal in mind, provisions were made for granting additional bonuses to workers in all sections. Thus, an additional indicator, "car-hours saved from all types of freight car idleness at stations and on spur lines" was established for the basic stations as well as the self-supporting ones. Under this method, the bonus for managers, engineers and technicians increases by as much as 25 percent for fulfilling and overfulfilling the indicator's goals. When the goals are not fulfilled, it decreases by as much as 50 percent, the same as when there is a production shortfall.

For engineers and technicians at way stations, reducing the norms for freight car idleness on spur lines is also included in the list of additional conditions for granting bonuses. Although the combined (switching) teams, who work on fixed tasks were encouraged in the past to reduce the norms for car idleness at stations, additional encouragement for reducing the norms for car idleness on spur lines was included in the indicators for granting bonuses, when the CSEUFC was introduced.

Also, a great deal depends on the freight and baggage handling officers who received bonuses, prior to the CSEUFC's introduction, for carrying out tasks involving static loads. Along with that indicator, an additional encouragement was provided for these workers to reduce average freight car idleness just during loading operations at stations and other operations on spur lines.

At present, staying within the norm for freight car idleness during loading and unloading operations is an extra condition for granting bonuses to managers, engineers, technicians and employees of the division's basic self-supporting enterprises (the locomotive roundhouses, freight car repair shops, track maintenance divisions, signalling and communication divisions, civil structures and power sections).

At each enterprise, additional provisions have been developed to grant bonuses for saving car-hours to the workers in the sections which load and unload freight cars. For example, at the Kleparov freight car repair shop, a series of measures for effective use of freight cars is being instituted, along with a system for quality control of repair work and maintenance of cars. These measures provide for an increase in the basic bonus for engineers and technicians, depending on the output quality factor during loading operations.

Moreover, additional bonuses have been established for the workers in the division's departments for reducing all forms of car idleness on industrial spur lines. In our view, this will lead to more efficient utilization of rolling stock and will involve all railroad employees in the struggle to reduce expenditures of freight handling resources.

The CSEUFC's fifth subsystem, "organization of socialist competition among the workers at all railroad stations and industrial transport shops" is being developed now in the division and in the industrial enterprises. It is envisaged

that the conditions for the competition will include a number of factors. The factors include melting (reducing) the norm for freight car idleness, saving car-hours, maintaining rolling stock and freight shipments in good condition, making efficient use of freight car tonnage and capacity and using machinery productively. Also, there are factors such as introducing advanced methods and progressive quotas in freight handling operations, overfulfilling planned tasks at stations and industrial enterprises for certain types of work (loading, unloading, sale of output, etc) and other factors. The logical extension of the CSEUFC will be developing industrial standards just for the railroad stations, involving use of rolling stock: "through car idleness without reclassification," "through car idleness with reclassification," and "freight car idleness at a single maintenance station."

The CPSU Central Committee's decree, which approved the work experience of the railroad and industrial employees of L'vov Oblast in effectively using freight cars, is another brilliant manifestation of our party's concern for improved transportation and for the people who serve the transportation system.

In carrying out the 26th CPSU Congress's decisions, the employees of the L'vov Division and the oblast's industries are persistently searching for additional freight handling resources to successfully fulfill and overfulfill the planned tasks of the 11th Five-Year Plan.

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RAILROAD

BRIEFS

RAIL CAR SHORTAGE--The railroad car shortage disturbs significantly Finland's exports to the Soviet Union and via the Soviet Union to the other CEMA countries. The shortage of covered railroad cars has delayed to this year deliveries especially of wood products which had been scheduled to take place last year. Transfennica, the export transportation organization of the forest industries associations last year failed, due to car shortage, to deliver approximately 100,000 metric tons of forest industry products. The major portion of this was paper. The amount corresponds to the requirement of approximately 3,000 covered cars. In terms of time these deliveries have been delayed by approximately 1 month. The Soviet Union last year provided the Finns with 13,000 covered cars less than had been agreed upon in negotiations in the early part of the year. Railroad transportation from Finland to the Soviet Union and via the Soviet Union to other countries is handled exclusively with Soviet cars. The Finnish National Railroads during recent times have subscribed to 300 covered cars a day. Yet, most often only a few tens of cars have been received. [Helsinki UUSI SUOMI in Finnish 13 Jan 82 p 25] 9718

RAIL USE STATISTICS--Last year 92 percent of Finland's Soviet exports was transported by rail. In all 9.2 million metric tons of goods were transported to the Soviet Union by train, over 3 million metric tons of which were transit traffic. Due to a shortage of Soviet rail cars the shipments were delayed by a month at their worst. [Helsinki HELSINGIN SANOMAT in Finnish 13 Jan 82 p 28] 9718

CSO: 3107/53

OCEAN AND RIVER

PROBLEMS OF THE DEVELOPMENT OF OIL CARRIERS

Moscow RECHNOY TRANSPORT In Russian No 11, Nov 81 pp 3-5

[Article by Deputy Chief of MRF (Ministry of River Fleet) Main Administration of Transportation and Fleet Operations A. Yegorov: "Problems of the Development of Oil Carriers"]

[Text] During the years of the Eighth and Ninth Five-Year Plans, the "Volgo-tanker" steamship line has been enriched with a much more mobile fleet--with tankers; and the limits of its operations have expanded significantly. Navigation has opened up on the Caspian, Black, Baltic, White, and Mediterranean Seas; the volume of transport of petroleum products has increased sharply on the Volga-Baltic, White Sea-Baltic, and Volga-Don waterways; the volume of transport of petroleum and petroleum products on mixed "river-sea" trips has grown, including that for export. The foremost operational methods in the transport fleet received such wide dissemination that it allowed an increase in the gross productivity of tankers of 11.3 percent and of nonpropelled tonnage of 22.8 percent.

However, since 1976, a reduction in the volume of transport has been observed which stopped just in the last year of the Tenth Five-Year Plan. Instead of an anticipated increase in transport volume and cargo transactions of 19.3 and 18.2 percent, respectively, for the Tenth Five-Year Plan, volume grew only by 3 percent and cargo transactions even decreased by 1.4 percent.

Along with the objective reasons which exerted a negative influence on transport, the lessening of attention by the steamship line, TsNIIIEVT [Central Scientific Research Institute of Economics and Operation of Water Transportation] and the Gor'kiy department of Giprorechtrans [State Institute for Planning in River Transportation] should be noted and also of the Ministry's central staff for switching petroleum cargo from rail to river transport.

The general development lay-out for transporting petroleum cargo in the Volga-Kama basin, which was worked out by TsNIIIEVT on assignment from the economic-planning administration and accepted as the basis for planning transport volumes for the Tenth Five-Year Plan, has proved not to be true in practice. In particular, the freight traffic of Mangyshlak and Turkmen oil from Aktau and Krasnovodsk was switched to pipeline transport to Tat'yanka.

For 1980, we anticipated transporting 5.2 million tons of petroleum products from Azerbaijan, Turkmen, and Georgian plants in Astrakhan' and Makhachkala to points

on the Volga and Kama with cargo transactions of 9.1 billion ton-kilometers, but the actual volume was 3 million tons with cargo transactions of 5.6 billion ton-kilometers. Thus, here also, the transport of 2.2 million tons of cargo and cargo transactions of 3.5 billion ton-kilometers was misstated to the steamship line. It should be noted that plans called for providing this powerful far-running freight traffic by means of the fleet's return loading. The planned volumes of tanker cargoes from Volgograd, Saratov, Gor'kiy, and Yaroslavl' also turned out too high.

All of this resulted in a deterioration of the freight traffic structure and, consequently, to a reduction of the fleet's gross productivity. As a result, the transport volume designated for the 5-year plan was not fulfilled by 5.1 million tons and cargo transactions by 7.6 billion ton-kilometers. Only because of reducing transport distances and increasing empty runs was the measure of gross productivity lowered by 4.8 percent with cargo transaction losses of 1.8 billion ton-kilometers.

The main organizing role in constantly raising the efficiency of transporting petroleum products in the Volga-Kama basin belongs to the "Volgotanker" steamship line.

In the last 5-year plan, little was done to create new freight traffic, to find ways of increasing the capacity of oil bases, and to improve work forms and methods in the oil fleet.

However, the deficiencies in the steamship line operation also should be noted. For the 5-year plan, ship anchorages increased by 11 percent and, moreover, they grew by 31.2 percent for technical reasons and double for other reasons. Reserves were not used fully in reducing time on cargo and technical operations, in anticipating cargo operations, in integrated fleet maintenance, and so forth.

In the Eleventh Five-Year Plan, we anticipate switching over 8-11 million tons of oil and petroleum products from rail to river transport, of which the primary volume will be transported on the "Volgotanker" steamship line. Therefore, it is essential right now to have a distinct program of operations for accomplishing this task and to plan the perspectives for improving oil transport for the Eleventh Five-Year Plan and until 1990.

The general lay-out for developing the "Volgotanker" steamship line, defined more precisely by TsNIIIEVT for 1980-1985, anticipates a growth in volume of oil transport in the Eleventh Five-Year Plan by only 5 percent altogether and of cargo transactions by 6-7 percent.

At the same time, operational experience and study of the situation for transporting oil and petroleum products show that there are reserves for further increasing oil transport volumes in the Volga-Kama basin.

Annually in the course of navigation, 6-7 million tons of oil products, produced by the Perm, Bashkir, and Kuybyshev processing plants, are delivered to the eastern regions of the country by rail.

In the Eleventh and Twelfth Five-Year Plans, oil processing enterprises will be constructed in Achinsk, Tobol'sk, and Tomsk. Besides this, a further expansion of the capacity of active plants is projected in Pavlodar, Omsk, and Angarsk.

Consequently, the necessity for delivering oil products from the Center beyond the Urals drops off and the freed resources will be directed toward the consumers of the North Caucasus, the Trans-Caucasus, the Ukraine, and the southeastern regions of the country where the demand for fuel is sharply increasing.

Special attention is merited by the problem of developing transport of 2.5-3 million tons of oil from the Shaim deposit by river transportation for the Volgograd, Tuapse, and Batumi petroleum processing plants, which now enters from Western Siberia by a railroad paralleling the waterways. In its time, the problem of switching this freight traffic to water via the Kambarka oil base was examined; however, this version was not accepted.

Now it is projected to move this oil by the Tyumen'-Kuybyshev pipeline to the Krotovka rail tanker station, from where it will be delivered by rail to Volgograd, Batumi, Tuapse, and for export. Therefore, the steamship line and the interested directorates of Minrechflot [Ministry of the River Fleet] must urgently find routes for switching this oil freight traffic to the Volga. When this problem is successfully resolved, the proposed cessation of transporting 2.5 million tons of West Siberian oil from Syzran' for the Baku petroleum processing plants will be compensated for completely.

One of the prospective trends in the area of improving oil transport is the preparation of gas condensate for transport from Astrakhan' to points on the Volga. This freight traffic can be opened up at the expense of the fleet's empty run, thereby compensating for the anticipated sharp reduction in dispatching low sulphur mazut from Astrakhan'.

At present, it has been decided to construct a gas condensate complex at Astrakhan'. The first line of this huge enterprise is projected to go into operation in 1985. The condensate output will be 2.5 million tons. In the future, it will increase still more. The problem of transporting the condensate is being reviewed now, and not only the steamship line but both the planning-economic and other interested directorates of the Ministry must be persistent in resolving all questions regarding switching it to water transport. Opening up the existing freight traffic and developing new ones in mixed "river-sea" navigation with the departure of ships to Black and Baltic Sea ports will play an important role in switching the additional volumes of petroleum products to water transport. It is known that now rail transport is diverted for bringing out petroleum products from the Saratov and Volgograd plants to Sevastopol', Odessa and for export in a volume of 2.3 million tons; and also from the Perm', Yaroslavl', and Gor'kiy petroleum processing plants in a northwesterly direction (to the Baltic ports) in excess of 3 million tons. For the time being, the steamship line does not have the fleet to accomplish this transport; and that is why the problem of constructing tankers under Project No 1677 acquires still more important significance.

The problem of increasing delivery of liquid fuel by river transport to heat and electric power plants near the river remains urgent as before. By decree of the

CPSU Central Committee and the USSR Council of Ministers "Concerning Measures for Developing River Transport in the 1981-1985 Period" in the Eleventh Five-Year Plan, construction of piers is anticipated at Volga TETs [Heat and Electric Power Plant] No. 1, Balakovo TETs No. 4, Volgograd TETs No. 3, Novocheboksary TETs No. 3, and Volgogradsk TETs No. 2 for unloading mazut from ships. At the same time, 6-7 million tons of fuel for navigation will as before be transported by rail to other TETs and GRES [State Regional Electric Power Plant] along the Volga.

The Gor'kiy department of Gipromchtranz has been working for some years on the technical-economic substantiation of constructing piers for TETs and GRES along the Volga. However, the low quality of these bases makes them impossible to apply in practical operations. Not one of those piers was constructed during the 5-year plan.

Only by this is it possible to explain the fact that nearly 3 million tons of mazut for navigation to Konokovo GRES, situated on the Volga, is delivered by a railroad parallel to the waterways.

Sormov TETs is next to the transfer oil base which belongs to the Gor'kiy directorate of the RSFSR Goskomnefteprodukt [State Committee for Petroleum Products]. The transfer of mazut from river to rail transport is organized through this oil base. Long ago it would have been possible here to organize the unloading of 300,000 tons of mazut from ships and for the Sormov TETs. For this it requires laying a 500-meter pipeline along the existing scaffold from the oil base to the TETs. However, at the TETs, fuel continues to be received in the railroad storage tanks which for nearly a day "loop" along the streets of Gor'kiy.*

The substantiation for constructing an oil pipeline from the TETs of KamAZ [Kama Automobile Plant] to the oil base in Naberezhnyye Chelny was not finished and, as a consequence, the projected main line was terminated.

Studies of the Gipromchtranz have a number of existing deficiencies. Thus, during the technical-economic substantiation for constructing a pier and a 12-kilometer oil pipeline for Volgograd TETs No. 3, the necessary investments were calculated for construction at the rate of 3 million rubles and its effectiveness for the national economy was substantiated by these. However, final studies conducted in 1980 by the Rostov department of the "Teploproyekt" Institute showed that expenditures for the indicated construction would be 20 million rubles and economically inefficient.

Meanwhile, Volgograd TETs is located only 4 kilometers from the Volgograd transfer oil base which is in a position to receive fuel from river ships for the TETs. To do this, it is necessary to connect the oil base with the TETs by an oil pipeline. The investment rates for this will be reduced several times.

Also, the calculations of necessary investments for constructing a pier and oil pipeline for Volgogradsk TETs No. 2 and Volga TETs No. 1 have been placed in doubt.

*See article, "A Million Are in the Pipe", GOR'KOVSKAYA PRAVDA, 12 April 81.

An improvement in the quality of operations conducted by the Gor'kiy department of Giprotehtrans will increase the role of river transport in satisfying the demands of TETs and GRES along the Volga for transporting fuel.

Problems for further increasing efficiency of oil transport by river transportation in the Volga-Kama basin must be resolved as a complex.

It is obvious that, by increasing the transport volumes of petroleum products from the Novoyaroslavl', Novogor'kiy and Perm' petroleum processing plants in the direction of the Volga-Baltic and White Sea-Baltic canal, the growth of fuel transport for the needs of agriculture along the Volga, mainly on the rapid and shallow lateral rivers, will increase the working capacity of transportation and will lower the indicators of fleet use.

At the beginning of the Eleventh Five-Year Plan, up to 76 percent of the total volume of oil cargo was transported in tankers. In the future, the specific weight of transfer in tankers will grow, although today this reflects negatively on the economics of transport.

Additional research is necessary in this direction.

Tankers must be used mainly in mixed "river-sea" navigation, including both the transport of cargo for export and also the transport of petroleum, gasoline, oil, and light petroleum products with a flash temperature up to 60 degrees. The specific weight of this transport is nearly 60 percent. It is necessary to use tanker barges, which must satisfy maximum operational requirements, for transporting all kinds of mazut and light petroleum products with flash temperatures above 60 degrees.

In its time, a barge-section with a load-carrying capacity of 9,000 tons was designed and constructed under Project No. R43, in spite of the objections of the steamship line and the Main Directorate of Transport and Fleet Operations. Its main deficiency was unsuccessful construction. The structure of two barges even behind a pusher with 1472 kilowatt power does not have sufficient controllability, but pushing such structures in separate sections is impossible. Problems for cleaning the inner-bottom space of the ships from the remains of petroleum products were not resolved, and their operation in icy conditions was difficult.

The steamship line requested a design for a tanker barge having a cargo capacity of 5,000-6,000 tons with one thickened bottom and two boards on the base of an existing barge under Project No. 426. Similar barges performed positively in oil transport in the Caspian maritime steamship line. The durability of the deck and bottom, compactness, and load-carrying capacity of 5,000 tons with 3.5 meter settling permit the use of these ships in all basins, including the Belaya River and reservoirs without weather restrictions. Such a barge is irreplaceable for the transport of mazut from the Bashkir, Perm', and Kuybyshev petroleum processing plants. The barge can be constructed without any major rebuilding by the shops of the Third Internationale SSRZ [shipyard]. However, the Astrakhan' TsKB [Central Design Office] for 3 years already has not been able to finish the drafting of such a barge, but the Third Internationale SSRZ continues to construct barges under Project No. R43.

It is necessary to think about the creation of an oil-dry cargo carrier with a cargo capacity of 4,000-5,000 tons for transporting petroleum products to the Baltic with a return load of grain or gravel for the central regions of the country.

The tasks for increasing oil transport in the Volga-Kama basin are impossible to resolve without the development in the steamship line of an industrial base for repairing the oil tanker fleet. Concentration of ship repair in the Astrakhan' plants leads to great losses in the carrying capacity of the fleet during the initial and final periods of navigation. Thus, nearly 1 million tons of tonnage is sent during early spring as ballast to points of the middle and upper Volga and Kama at distances over 1,000 kilometers and returns to Astrakhan' as ballast for winter repair and cleaning.

The number of operational oil-ore carriers increases annually. Technical maintenance of them is reserved for the Kuybyshev SRZ [ship repair yard] which is located not far from the area of their continuous operation.

Annually, the steamship line increases the share of transporting petroleum products to the northwest and the upper Volga and does not have one ship repair enterprise there. Related to this, the Kuybyshev SRZ is overloaded with nearly 90 tankers assigned for economic-technical maintenance.

The unfortunate geographical location of ship repair enterprises and their inadequate capability for organizing restorative operations led to premature wear and tear of tankers with a cargo capacity of 3,300 tons under Project No. 587. According to the situation at the beginning of 1981, the number of tankers in good and satisfactory technical condition dropped in 1 year from 81 to 77.5 percent.

The problem of making major repairs on tankers with a cargo capacity of 5,000 tons under Project No. 558 is not resolved. Nine such tankers already have been placed in major repair this year, and it is possible to complete repair of only two to three tankers per year. It is essential to work out a long-term program for restoring these tankers at the Ministry's ship repair and ship construction enterprises.

An attempt is being made now to distribute industrial enterprises of the steamship line in the upper Volga and in the Kama basin. However, the construction periods of the ship repair enterprises for the oil fleet in the upper Volga are intolerably delayed. The ship repair plant in Rabotki is in the stage of preparing for construction, and the periods of its termination have not been determined. Two years ago, with a great deal of difficulty, permission was granted for construction of an oil fleet ship repair base near Volgorechensk. It is essential that GUKS [Main Directorate of Capital Construction] expedite the design and construction periods of this enterprise which will allow an improvement in distribution of the fleet and remove the tension associated with its economic-technical maintenance.

There are still many more important problems in the steamship line. In particular, these problems have not been resolved: mechanization of cleaning operations

for the ship hulls and especially the inner-bottom spaces; proper attention is not being devoted to reconstruction and development of oil-transfer and oil-bunker stations, steamers, and clean cable fasteners. There is no clear direction in developing a light tonnage oil fleet for transporting fuel on rapid, shallow rivers.

The steamship line needs the active assistance on the part of the main directorates, directorates of the Ministry, and scientific-technical and design organizations in order to increase the transport efficiency of petroleum products in the Volga-Kama basin in the current 5-year plan.

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OCEAN AND RIVER

NEW METHOD OF SHIP PROCESSING INTRODUCED

Moscow VODNYY TRANSPORT in Russian 19 Nov 81 p 2

[Article by Chief Engineer of TsPKTB "Azcherryby" [Central Planning, Design and Technological Office of the Azov-Black Sea Fisheries] G. Tereshkin: "From Experiment to Practice"]

[Text] In 1980, an experiment was begun simultaneously in the Sevastopol', Novorossiysk, and Kerch maritime fishing ports for implementing ship processing by the piecework method.

The people of Kerch were the instigators of the piecework method in the Azov-Black Sea basin. In April of 1980, they processed the ship "Arabat" using this method. With a norm of 45 hours and 10 minutes, they prepared it for a trip in 36 hours and 30 minutes.

In the Sevastopol' fishing port, a work brigade council was chosen in each dock workers' collective; and, in the cargo district, a council of brigade leaders worked out "Regulations on the Piecework Method for Processing Ships", methods for implementing it, and registration and accounting forms.

According to this regulation, the port chief in agreement with the brigade leaders council makes the decision on ship processing using the piecework method. Management determines the ship processing periods, provides supply orders for loading products, provides railroad cars, and accomplishes the technical engineering guidance through a technological process.

The contract is signed: on the part of the port management are the deputy port chief for operations and the cargo district chief, and for the worker brigades are members of the council of brigade leaders. Then the port chief confirms the contract in agreement with the trade union base committee.

The material interests of the mechanical dock workers also are of no small importance in implementing the piecework method. The payment rate for their labor is determined on the basis of operative standards and rates for loading-unloading operations, and it takes shape through a single supply order for all work accomplished on the ship. The members of the work brigade receive a bonus for qualitatively completing operations and processing the cargo of the ship ahead of schedule. If the work brigade fulfills the contract according to the volume of

cargo turnover and the standardized anchorage time of the motor ship, the dock workers receive an extra bonus--40 percent of the piecework earnings from the wage fund. For reducing the anchorage time of the ship, they receive up to 20 percent of the piecework earnings. Awarding the bonus for qualitative ship processing is based on information from the fish delivery organ, the cold storage plant, and the ship owner and, for reducing anchorage time, on information from the main dispatch service.

The bonuses are distributed by the work brigade councils among the dock workers proportionately by actual processing time taking into account the personal contribution of each member of the work brigade, i.e., taking into account the worker participation rate which is determined within the limits of 0 to 2.

Working with the piecework method, the dock workers use a combination of professions: loading and electrical truck drivers, crane operators, signallers, and winch operators. The role of the work brigade leaders and team leaders increases significantly.

The well-established organization of labor in the all-round worker brigades and port services and the agreed and mutually coordinated actions of the mechanical dock workers and ship crew members, and of the railroad workers--of all participants of the transport assembly line--have brought success. Processing of the transport refrigerator ship "Onezhskiy Zaliv" in the Kerch maritime fishing port was completed 14 hours earlier than the established deadline, and the processing of the refrigerator ship "Pechorsk" in Sevastopol' port by 12 hours and 10 minutes. During processing of the refrigerator ship "Tavriya" in Novorossiysk, besides dock workers the all-round worker brigade was comprised of 12 electrical truck drivers, 6 crane operators, 3 metal worker-repairmen, and 4 stevedores. During processing of the "Tavriya" shift, norms were accomplished by 150-180 percent. The results did not delay saying that the ship was prepared for the trip by 10 hours and 20 minutes ahead of time.

What did the experiment show? First, it became obvious that labor productivity increases during ship processing using the piecework method; work quality, discipline, and the moral climate in the collective improve; and earnings rise. Secondly, deficiencies characteristic of the basin ports appeared more vividly--for example, the slipshod work of the railroad workers. Thus, in August, 397 rail cars were requisitioned by the Sevastopol' port but, altogether, 296 were delivered; in September, 640 and 420, respectively; and, in October, only 342 of the 630 requisitioned cars were delivered.

Because of the heavy wear of equipment which was out of order, electrical trucks were replaced from the reserve of another shift (of the worker brigade). In the cold storage plants of the maritime fishing ports, occasionally there were no storage tanks for the distribution of fish products on the very occasion when there were insufficient rail cars. Loading the ships of the "Yugrybkholodflot" association and the "Mortransflot" administration was often accomplished in small lots. And this made loading the rail cars difficult.

Deficiencies were partially eliminated in the course of the experiment. They tried to load the transport refrigerator ships at the fishery enterprise in

consolidated lots. A requisition was drawn up for renovating the fleet of loading equipment. The order "Concerning Deficiencies in the Planning, Processing, and Taking Inventory of Rail Cars" was issued in the All-Union Fishing Industry Association of the Azov-Black Sea Basin in which it stated in particular that port chiefs must provide operational storage tanks in cold storage plants during ship processing by the piecework method.

Meanwhile, unfortunately, the problem of delivering the necessary quantity of rail cars has not been resolved. It is evident that the management of the Sevastopol' and Kerch divisions of the Pridneprovsk Railroad and of the Novorossiysk division of the North Caucasus Railroad is obliged to take special measures to provide ports with rail cars in a smooth and uninterrupted fashion. It should also be mentioned that the existing planning mechanism for the delivery of rail cars is obsolete and does not answer the growing demands of ship processing. The necessity was imminent for going from monthly planning of rail car delivery with a uniform breakdown of the plan into days over to continuous planning by taking into account the available products on approaching ships in order to organize unloading more economically according to the version of the shipboard-rail car.

Now the experiment is completed. General implementation of ship cargo processing using the piecework method is beginning. This year, only 46 ships were projected for processing using the new method. The people of Sevastopol' have already processed a great deal of refrigerator ships. For example, 28 ship-hours were saved during the unloading of fish products from the transport refrigerator ship "Amurskiy Zaliv". Rapid processing of the refrigerator ship "Taganrogskiy Zaliv" permitted the ship to depart for the fishery enterprise 6 days earlier than was planned. So life confirms that the future is for the piecework method.

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OCEAN AND RIVER

CARGO SAFETY, ACCOUNTING PROBLEMS DISCUSSED

Moscow VODNYI TRANSPORT in Russian 3 Nov 81 p 2

[Article by Commercial Services Chief of the Estonian Maritime Steamship Line, A. Eydast, candidate of Economic Sciences and Group Dispatch Engineer of the Estonian Maritime Steamship Line, I. Klimenko, staff member of the Estonian SSR National Quality Control Committee at the Tallinn Transport Center: "An Experiment is Needed"]

[Text] Questions have been raised repeatedly in the newspaper about the quality of transportation production and first of all about the safety of national-economic cargo during transport. But, for the time being, unfortunately, this problem still is not resolved completely.

Measures have been worked out for increasing the quality of transporting and transshipping cargo, and they have been implemented in both the fleet of the Estonian Maritime Steamship Line and also in the port of Tallinn. Thanks to them, the steamship line and the port have obtained certain successes. Some goods are transported and transferred with a guarantee of complete safety. Thus, freight traffic of the European lines is practically 100 percent containerized; implementation of transporting goods of the West African line (cement, cocoa beans) in the packaged form is in the completion stage.

Nevertheless, the situation causes serious concern when one takes into account the exterior condition of goods in Soviet ports.

Losses from miscalculating freight points comprise a heavy, and, during individual periods, the largest, share of losses from unsafe transport. The largest quantity of diverse export and import cargo is transferred in the port of Tallinn and, therefore, the quality of moving these goods while here in many instances determines their losses due to an unsafe condition. In spite of measures taken--a full staff of tallymen during individual periods, production training, and so forth--so far we have not succeeded in improving the quality of cargo accounting, both from the standpoint of the port tallymen and the Service for Maintaining the Transport Fleet (SOTF).

An analysis of this work for recent years permits the conclusion that, besides the reasons that depend on the respective steamship line and port services and departments which, in principle, can be eliminated, there are factors also that

do not depend on us. In the opinion of the Estonian steamship line, one of these is the existing general order of cargo receipt and delivery.

Its main peculiarity is the multifaceted cargo accounting: ship-to-port, port-to-railroad, and so forth. For example, although in accordance with existing regulations for transferring cargo using the direct version (ship-to-railroad car, railroad car-to-ship), such a delivery is accomplished without the participation of the port tallymen. However, in the interest of quality of cargo operations, the port, all the same, often is forced to employ its tallymen.

The tallymen staffs of SOTF, the port, and the railroad in Estonia practically never are filled completely. The wage and bonus sums paid out to the tallyman personnel, not counting the other indirect expenses (lodging, dwelling, education, and so forth), are significant and, even for such a medium-size port like Tallinn and together with SOTF, they comprise more than 200,000 rubles per year.

Considering the high cost of transporting cargo, these expenses could be justified if the multifaceted accounting were successful in improving its quality. Unfortunately, it does not have a tendency for improvement. Often, the tallymen of the port, SOTF, and the railroad copy the tally sheet data from each other. When there is a difference of accounting results, the true cargo quantity is not rechecked; and the question is resolved in favor of the side whose tallymen show the most persistence.

Naturally, disciplinary and material measures are taken against the guilty persons, however, not always with the desired results. The unattractive nature of working outside at any time of the year, shift work, working on holidays leads to the fact that, when there is strict, although deserved punishment, the tallymen leave on their own desire and the enterprise is forced to recruit and train new ones.

Taking into consideration that, for the near term, the elimination of basic deficiencies in the existing order of cargo receipt-delivery in ports, on our opinion, is unrealistic, the Estonian steamship line is considering an essential fundamental way to change this order. The question of a similar reorganization was already pointed out by A. Tal'ko, chief of the Il'ichevskiy Branch Office of SOTF. in the article "Reorganization is Required" published in the newspaper on 3 September of this year. We think this demand will be satisfied to a great degree by the creation of a neutral tallyman office of the "Mortranskontrol" type to perform the accounting and cargo quality control like an organization that is not interested in distorting the real picture during any transfer of goods. However, inasmuch as cargo accounting and the evaluation of its exterior condition are closely tied with the appraisal done by specialists of the bureau of freight appraisals, it is worthwhile to organize it under the Chamber of Commerce and Industry.

The drafts "Regulations Concerning the Production Enterprise for Cargo Control 'Mortranskontrol'" and "Regulations Concerning the Interrelationships of the Production Enterprise 'Mortranskontrol' and Its Branch Offices with Steamship Lines, Ports, and Other Organizations" were still being studied by steamship lines in 1977. They gave their criticisms and suggestions on this problem.

However, due to reasons unknown to us, the work was not accomplished. And the responses of all the steamship lines, according to our information, were entirely positive. Therefore, we think that it is impossible to consider the question closed. It requires further study, experiment, and a final objective decision.

The positive aspect of creating a neutral tallyman office would be the reduction of the total number of tallymen and the possibility of staffing it with the best workers and increasing their official salaries. The presence of highly qualified supervisor-experts on the tallyman office staffs would allow them, in the event of spoilage or damage, to determine not only the condition of the cargo but also the reasons for it.

Considering the urgency of the question raised, the Estonian steamship line considers it essential once again to conduct a broad discussion of the commercial-legal and economic aspects of the proposed reorganization. On the basis of the expressed criticisms and proposals, an experiment should be conducted in the conditions of some moderate size port.

We think that Tallinn could become one of the suitable ports which handles a sufficiently diverse freight traffic volume.

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SHIPS OF MIXED NAVIGATION DISCUSSED

Moscow MORSKOY FLOT in Russian No 11, Nov 81 p 51

/Article: "Ships of Mixed Navigation"/

/Text/ The first of a series of training-production ships of mixed (river-ocean) navigation was recently built for the Soviet Union at the Layvateollispuus Shipyard in Turku (Finland). Construction of ships belonging to this series will be completed in 1982.

The constantly growing hauls along the rivers, especially in the Siberian regions, as well as the significant growth in the body of the river fleet, have required an increase in the number of river-fleet specialists. Such training-production ships will facilitate the solution of this problem; instruction on them will take place most effectively because theoretical knowledge will be immediately reinforced in practice.

Adopted as the basis for designing ships of this type were ships of the "Baltiyskiy" Class, which were also intended for navigating along rivers and on the ocean and which have been built since 1978. They have three box-type holds with a holding capacity of 3,475 m³, suitable for hauling general cargoes, grain, coal, timber and containers. There is space for 48 containers in the holds and for 35 on the deck. The folding-type hatch covers, produced by the Valmet firm, have hydraulic controls.

In order to re-structure the ship for training-production, it was decided to replace the cargo hold (the last toward the stern) with areas for training purposes. This new diesel ship was named "Baltiyskiy-112" and was built for the USSR Registry Class KM ★ L2P SP 0. The ship's greatest length is 95.0 m, width 13.2 m, settling 3.7 m, deadweight 1900 t, hold capacity 2769 m³, and speed 11.6 knots.

Two SKL NVD 48A 2U-type diesels, operating on heavy fuel, have been installed on the ship. Their total capacity is 1280 kW (1740 h.p.). Maximum distance from port in the Baltic, White, Black, Azov, and Caspian Seas must not exceed 100 miles.

For training purposes there is a large hall, an auxiliary engine room, and training workshops. This diesel ship has been equipped with a training navigation bridge, furnished with the necessary instruments. In case of necessity controls can be transferred here from the main bridge. Heavy-duty television screens have been installed in the training pilot-house, and with their aid one can see the pilot plotting in detail. The ship has been designed for a crew of 24 men, 6 instructors and 52 officer candidates.

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OCEAN AND RIVER

SHORTAGE OF RAILROAD CARS CITED

Moscow SOVETSKAYA ROSSIYA in Russian 27 Dec 81 p 1

[Article by V. Mikhaylov, correspondent: "They Are Tired of Waiting"]

[Text] A Shrill Alarm Signal

/At the Kaliningrad commercial seaport more than 20 ships loaded with grain have been waiting to be unloaded for well over a week now. Losses from idle time have already exceeded 300,000 rubles./ [in boldface]

They Are Tired of Waiting

It is as if A. Mikhaylov, chief of the Kaliningrad commercial seaport, is incapable of talking about anything else:

"What kind of news can there be?! There are now 23 ships at the docks and out in the roadstead. And there are no railroad cars!"

The railroad tracks stretching along the docks are deserted.

"My brigade has been idle, just think now, for almost two weeks," angrily stated L. Baydachenko, brigade leader of the dock workers. "We find odd jobs for ourselves just to pass the time."

"We have also become tired of waiting," the docker is seconded by V. Link, captain of the "Baltiyskiy-31. "This job should take no more than a total of 16 hours, and here we have been standing here for 10 days already."

K. Aver'yanov, the chief of the Kaliningrad Division of the Baltic Railroad, informs us that the complaints of the port people are justifiable. Unfortunately, he adds, during the second 10-day period in December the division's operating pool had only 400 boxcars daily instead of 700 in accordance with the plan.

Could something be changed at the site itself?

"It could be," admitted K. Aver'yanov. "At very few places is rolling stock turnover as rapid as it is at a seaport. Most of the troubles occur at commercial and modest-sized industrial enterprises, where the warehouse and storage facilities

are in a state of neglect, and the loading-and-unloading operations are quite often done manually. In the middle of the last 10-day period in December 100 boxcars were standing idle here at the Kaliningrad Freight Yard, and this was basically their fault."

"Ideally speaking," explains K. Aver'yanov, "by means of better utilization of the railroad car pool we would be able to increase the supply of rolling stock to the port. But not by much. You know, according to the plan we are supposed to obtain 80 boxcars every day from outside the oblast. But usually they deliver no more than a fourth of the planned amount."

As far back as this fall the Ministry of Railways issued orders to ensure the maximum return of cars used for grain to places where they are loaded primarily in the form of individual trains. This was an intelligent decision, but not a single such main route returned to Kaliningrad.

"It is thought that the Ministry of Railways has failed to take still another important circumstance into consideration," emphasized V. Skitov, manager of the Transport and Communications Department of the CPSU Kaliningrad Obkom. "Our port is a non-freezing one, and with the onset of frosts, there is a growth in the number of ships directed to us. There should also be a corresponding increase in the delivery of railroad cars. The actual situation is just the opposite: there are more ships and fewer railroad cars."

2384

CSO: 1829/91

OCEAN AND RIVER

PLASTICS FOR REPAIR OF SHIPS

Moscow VODNYI TRANSPORT in Russian 5 Jan 82 p 3

[Article by A. Kholost, chief of the scientific research laboratory of the Black Sea Central Planning and Designing Office: "The Omnipotent Polymers"]

[Text] Synthetic materials are finding increasingly wide use in the repair and servicing of ships. Today their products list numbers more than 500 items.

The work experience in this field demonstrates the high technical and economic effectiveness of the use of polymer materials in the fleet and in a number of cases makes it possible to find fundamental and new solutions to complex technical problems.

Thus, the introduction of caprolon bearings in repairing deadwood and rudder gear has made it possible to increase their service life and to do away with import purchases of deficit lignum vitae and, on the basis of prolonging service life and decreasing the labor intensiveness of repairs, to obtain an annual economic effect in the branch as a whole of around 800,000 rubles.

The use of plastic for the parts of ship mechanisms instead of metal, even in view of the small series character of their production, besides an economy of metal, makes it possible to decrease the labor intensiveness in their manufacture by 3-4 times and, with service lives comparable to those of metal parts, obtain an economic effect of 10,000 rubles per ton of plastic.

The use of polymer adhesive compositions is also very effective. For example, in repairing hull elements, through a decrease in the amount of accompanying operations in the traditional technology, an economy is achieved in the amount of 5,000 rubles per transportation vessel, while for a passenger vessel the effect increases by four times.

The use of polymer adhesives in installation operations, especially for the stern complex of large-capacity ships, shafting, large-capacity diesels, and others makes it possible to increase their reliability and to substantially decrease the amount of work. The introduction of the new technology will shorten the layover time of ships in repairs by 3-5 days and will make it possible to economize 20,000 rubles.

The possibilities for a further expansion of the sphere of the use of synthetic materials are far from exhausted. The limited deliveries of these materials are an important brake upon expanding and accelerating the introduction of synthetic materials in the fleet. The requisitions of enterprises and steamship companies are met, as a rule, at the level of only 50%, while the quality of materials delivered leaves a great deal more to be desired. During the 11th Five-Year Plan it is planned to expand the field of application of synthetic materials in the repairing and technical servicing of the fleet. A large amount of attention will be devoted to operations which can be performed on ships without removing them from use.

In order to coordinate the scientific research and experimental designing work in the field of the introduction of synthetic materials which is being performed in related branches the Black Sea Central Planning and Designing Office has prepared the draft of an inter-departmental coordination plan for scientific research and designing work to improve the efficiency and quality of ship repairs on the basis of the use of synthetic materials, products made from plastic, and production processes based on them. This will eliminate parallelism and will speed up the introduction of the results of scientific research, experimental designing, and production planning work.

The basic directions for the development of our country provide for outstripping development rates for the chemical branch. It is planned to expand and systematically renew the products list and assortment of structural materials, to increase the production of progressive materials which replace ferrous and non-ferrous metals, to develop the production of polymers with assigned technical characteristics, and to increase the production of plastics 1.5-1.7 times. This is creating prospects for a further expansion of the amounts and fields of the introduction of synthetic materials in repairing and servicing ships and for an improvement on this basis of the efficiency and quality of the operation of the fleet.

2959

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OCEAN AND RIVER

TOURIST CRUISES ON KARAKUM CANAL HIGHLIGHTED

[Editorial Report] Ashkhabad SOVET TURKMENISTANY in Turkmen 27 September 1981 p 3 carries a 1,500 word article by a Gundogdy, director of Administration for Foreign Tourism under the TSSR Council of Ministers, on current tourist routes in the TSSR. Among the possibilities: Intourist in Ashkhabad oblast provides an opportunity to tour its sector of the Karakum Canal and in Mary provides "tours for their guests on a pleasure cruiser along the Karakum Canal." Tourist ships are run by "Garagumgidrostroy."

KRASNOVODSK SHIPPING ACTIVITY DESCRIBED

[Editorial Report] Ashkhabad SOVET TURKMENISTANY 9 October 1981 p 2 carries a 1,000-word article by O. Charyev describing harbor activity in Krasnovodsk. He notes that "we see 17-18 thousand tons of cargo handled daily" from Astrakhan. "Cargo coming into the port is grouped here and sent by water and railroad transport to all corners of our country."

KARAKUM-AMU RIVER LINK DESCRIBED

[Editorial Report] Ashkhabad SOVET TURKMENISTANY in Turkmen 7 October 1981 p 1 carries a 150-word note by G. Velinazarov, foreman at the 'Gidromekhanizatsiya' Construction-Assembly Administration of the "Garagumgidrostroy" Trust in Nichka. "We are working on the Bashsaka section of the V. I. Lenin Karakum Canal. We stand watch day and night guaranteeing the regular flow of the Amu River along the canal and operate sludge dredgers...We have increased the canal's yield two-fold by cleaning out its foundation and broadening its width...We reported on fulfilling our personal quota just before USSR Constitution Day."

ART EXHIBIT ON TURKMEN-AFGHAN BORDER

[Editorial Report] Ashkhabad SOVET TURKMENISTANY in Turkmen 18 September 1981 p 4 carries an 800-word article by I. Ruban, chairman of the Fleet Cultural Guidance Commission of the Secretariat of the USSR Writers Union Administration, on the 11th All-Union festival "The Artists to the Fleet" opening 16 September and running 40 days. It "will take place on ships of the Caspian Sea Shipping Administration, the Central Asian Shipping Administration, the V. I. Lenin Karakum Canal, and in factories on the shore in Azerbaijan and Turkmenistan." Connected with this, the Agitplakat Production-Creativity Organization "will present a separate exhibition of 20 posters to the "Druzhba" agitation ship which plies

the route along the Amu River adjacent to Afghanistan. The All-Union creative group will initially divide into two groups. One of them will begin to collect materials on the Amu River for future films; the other will do the same on the Karakum Canal. Then the artists will travel to Krasnovodsk where they will draw sketches, studies and portraits. In mid-October this group will continue its work in Baku."

GOSPLAN COMPUTER DIRECTOR ON KARAKUM CANAL

[Editorial Report] Ashkhabad SOVET TURKMENISTANY in Turkmen 6 October 1981 p 2 carries a 1,100-word interview with Juma Bayramov, director of the Economics Institute-- "the computer center of the TSSR Gosplan"--on the prospects for the economic development of the TSSR. With regard to development planning, the ramifications of the "Integrated Industrial and Economic Mastery of the Construction of the Karakum Canal and its Zone of Influence" program is described. "This program revolves around the construction of the Karakum Canal and deals with the problems of rationally locating production and sociocultural units, of building housing and distributing the population." With regard to the East Turkmenistan Territorial Production Complex: "It possesses rich natural resources: natural gas, sulphur ore, potash salts, nonore construction materials. The Amu River guarantees cheap freight transportation." On land reclamation made possible by the Karakum Canal: "Every new million hectares...can yield 200,000 tons of meat and 770,000 tons of dairy and related products...The operation of the fourth link of the canal assures...the powerful growth of cities like Gyzyarbat, Gazanjyk and Krasnovodsk."

CSO: 1834/1018

MISCELLANEOUS

CONSTRUCTION OF URENGOY-PETROVSK PIPELINE DETAILED

Progress as of 4 November

Moscow STROITEL'NAYA GAZETA in Russian 4 Nov 81 p 1

[Letter, project schedule, and comment by G. Sudobin, deputy minister of construction of petroleum and gas industry enterprises: "A Telegram to the Ministry of Construction of Petroleum and Gas Industry Enterprise, Moscow"]

[Text] To the Minister:

In June 1981 our comprehensive production line adopted stepped-up socialist obligations — to construct the 100-kilometer segment of the Urengoy-Petrovsk gas pipeline assigned to us by the 64th anniversary of Great October instead of the second quarter of 1982 as envisioned by the plan — and called on all construction workers employed here to accelerate the launching of this very important project for the energy fuel sector.

The collective has kept its word: our segment of the pipeline was completed on 27 October, which was 10 days earlier than stated in the obligations.

This is our gift of labor to the celebration of Great October.

On behalf of the collective of construction workers — I. Shaykhutdinov, line chief, and V. Nikulina, party group organizer

Record of the Shock Construction Project (Progress as of 4 November, in kilometers)

	Total Assignment	Top Welding		Insulation Laying	
		Done	Remaining	Done	Remaining
Glavsibtruboprovodstroy	854	524	330	464	390
Glavvostoktruboprovodstroy 1,	115	1,000	115	940	175
Glavtruboprovodstroy	462	462	-	426	36

[Continued next page]

	Total Assignment	Top Welding		Insulation Laying	
		Done	Remaining	Done	Remaining
Soyuzintergazstroy	101	101	-	101	-
Glavukrнеftegazstroy	194	194	-	190	4
Ministry of Gas Industry	5	The crossings over the Volga reservoir are completed			
Total	2,731	2,286	445	2,126	605

G. Sudobin, deputy minister of construction of the petroleum and gas industry enterprises, comments on the above report:

We at the ministry expected that if the collective of I. Shaykhutdinov's line gave its word, it would certainly keep it. And now, as we see from the telegram, the initiators of competition in construction of the Urengoy-Petrovsk gas pipeline have cut even more time off the schedule.

The practices of this collective will be carefully studied and disseminated. Now for a word about construction of the pipeline in general. Let me recall that according to the original plan 1,273 kilometers of pipeline was to be put into use this year. Considering the enormous significance of this project for the energy fuel industry, the labor collective of the ministry took on obligations to complete the entire line this year, that is 2,731 kilometers.

The bulk of the incomplete work belongs to the Siberian subdivisions. All the line teams of Glavsibtruboprovodstroy [Main Administration for Pipeline Construction in Siberian Regions] are already concentrated on the starting lines. The temperatures are reaching 20 below. In the very near future the Siberian workers can and must increase the pace of pipeline insulation and laying to at least 10 kilometers a day in order to complete the work by mid-December.

The chief task of the other main administration, Glavvostoktruboprovodstroy [Main Administration for Pipeline Construction in Far Eastern Regions], is to direct personnel who have been freed by completion of certain segments to help collectives that are behind in the three trusts Nefteprovodmontazh [Petroleum Pipeline Installation], Omsktruboprovodstroy [Omsk Pipeline Construction], and Uralneftegazstroy [Ural Petroleum and Gas Construction]. Moreover, they must teach them how to organize work on the line and how to synchronize performance of the jobs of hauling up the pipe, welding, digging trenches, and the like.

But already by the first 10 days of November Glavtruboprovodstroy [Main Administration of Pipeline Construction] and Glavukrнеftegazstroy [Main Administration for Construction of Petroleum and Gas Enterprises in the Ukraine] need to complete all line work and turn over the gas pipeline for operation within the month, completing the certificate of its acceptance by the state commission.

The workers who are building the underwater crossings still have a good deal of work to do and are behind schedule in some places. More than half of the power transmission lines along the pipeline route have not been built, which may delay the installation of electrochemical protection.

Unfortunately, everything does not depend on the construction workers. Equipment and connecting parts have still not been delivered to many sections which are ready for testing, and without them the pipeline cannot be put on line. We urgently request the management of the Ministry of Gas Industry and its associations to provide supplies to our common construction project more promptly.

Completion Announced

Moscow IZVESTIYA in Russian 31 Dec 81, p 1

[Article by M. Malakhova and Yu. Perepletkin: "The Pipeline Is Laid"]

[Text] The workers of the USSR Ministry of Construction of Petroleum and Gas Industry Enterprises have completed line work on the largest energy fuel construction project of the five-year plan, the gas pipeline from Urengoy through Nizhnyaya Tura to Petrovsk. The two "red" final connections were completed in the northern and southern arms of the route, near Nadym and Ufa. The underground road for West Siberian gas is laid over its full distance of 2,730 kilometers.

Among the leaders in competition who were given the lofty honor of doing the final work were B. Diduk, a welder from the Severtruboprovodstroy [Northern Pipeline Construction] Trust who has won the State Prize, F. Mukhamediyarov, steel seam foreman, V. Madenov and N. Nazmiyev, managers of insulation and laying columns, and V. Grichishkin, driver of a heavy-duty pipe truck.

So, thanks to innovative work it was possible to save almost six months over scheduled time at one of the important projects of the five-year plan. Leaders in competition at the projects to build the Urengoy-Novopskov and Urengoy-Uzhgorod gas pipelines have taken on similar obligations. Many subdivisions of Glavtruboprovodstroy, Glavvostoktruboprovodstroy, and Glavsibtruboprovodstroy on the Novopskov line, for example, have decided to complete line work in their sectors several months ahead of schedule, by the 112th anniversary of the birth of Vladimir Il'ich Lenin.

11,176

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MISCELLANEOUS

WINTER CAUSES PROBLEMS FOR ROAD, RAILROAD SYSTEMS

Moscow PRAVDA in Russian 6 Feb 82 p 1

[Editorial: "The Wintry Road"]

[Excerpt] At the same time, the winter revealed that highway facilities were unprepared in a number of areas. For instance, there were frequent traffic jams and temporary stoppages of bus traffic on the Voronezh-Kursk road, since the route was poorly prepared for operation in wintry conditions. Highway accidents involving transport vehicles slowed traffic in Orenburg, Kuybyshev, Tula, Omsk and a number of other oblasts. Such occurrences must be eliminated. It is the duty of workers at transport-line production sections, rayon and oblast road organizations to improve road maintenance, street conditions in cities and villages and to react energetically to changes in weather conditions.

By the beginning of winter, a great deal of work had been done on the railroads: the tracks had been repaired and the conditions of the ties and rail fastenings had been checked. However, not all main lines dealt in a timely manner with the plan for major repair, for laying continuous welded tracks on reinforced concrete ties or replacing worn out rails. Some railroads did not have proper concern for reinforcing track maintenance machine stations or improving the technology of repair work. As a result, engineers must now be warned to limit the speed of trains.

One of the reasons for this situation is delay in delivering structures, equipment and materials to the track maintenance workers. Thus, the metallurgical combines at Nizhniy Tagil and Kuznetsk failed to provide in a timely manner 100,000 tons of rails to the railroad workers. There are acute shortages of rail fasteners, wooden and reinforced concrete ties and track maintenance machines. Energetic measures to improve supply for transport workers and provide them with everything needed must be taken by the managers of union-level Ministries of Ferrous Metallurgy, Heavy and Transport Machine Building, Construction Materials Industry, Timber, Pulp and Paper and Wood Processing Industry.

Winter has not only aggravated seasonal problems for highway facilities. As is well known, an appreciable increase in output of heavy vehicles, which will increase the stress on roads, was planned for the 5-year period and is being accomplished. The increased intensity of such truck traffic had shown that the technical condition of many highways does not correspond to modern demands. Up to now, such roads as the Moscow-Voronezh or Moscow-Kuybyshev have been regarded as third-class roads. That means that these roads can only be used by vehicles with a small axle load.

In other words, modern KamAZ [Kama Automotive Plant], MAZ, [Minsk Automotive Plant] and KpAZ [Kremenchug Automotive Plant] trucks, LAZ [L'vov Bus Plant] and "Ikarus" passenger buses are forbidden by law to travel on such roads.

There is a long-range plan for upgrading those two roads and a number of similar highways to a higher category. However, the managers of the RSFSR Ministry of Highways are delaying the resolution of this problem. This delay is leading to the compulsory use of small-capacity trucks and buses on these roads, which necessitates additional drivers and overexpenditures of fuel. There is only one conclusion which can be drawn from this: roads which can sustain heavy loads must be built more quickly and existing roads must be reconstructed. The republic-level Ministries of Highways must coordinate more precisely the activities of their subordinate divisions.

It is particularly necessary in winter to strive for uninterrupted supply of materials and equipment to transportation workers. This involves deliveries of fuel, equipment, materials and warm clothing. Any slowness or negligence in this important matter has a negative impact on the work of the road workers and can lead to serious transportation breakdowns and even accidents. Particular attention must be paid to highway installations, including service facilities for drivers enroute. Everywhere along the roads there must be a sufficient number of motels, gas stations and eating spots.

During the winter, there must be increased concern for organizing passenger transportation. In past weeks, traffic schedules for trains and buses have been disrupted in places due to blizzards, fog and icy roads. Sometimes trips were postponed or delayed because of bad weather. Letters are coming into the editorial offices of PRAVDA, in which our readers justly demand that in such cases the transport workers should not only try to speed up passenger departures, but should display maximum concern for the passengers, provide them with conditions conducive to rest and improve the work of information services.

The task for party organizations and communists in road subdivisions is to attentively and thoroughly analyze the work of transport workers in winter conditions. They must also support and disseminate advanced experience and must mobilize people, by their personal example, to successfully fulfill plans and socialist obligations. Together with local soviets of peoples' deputies, the party organizations must strengthen their supervision of transportation.

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